SCIENTIFIC AMERICAN.

THE ADVOCATE OF INDUSTRY AND ENTERPRISE, AND JOURNAL OF MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME I.] NEW-YORK, THURSDAY, MARCH 5, 1846. [NUMBER 25.]

THE SCIENTIFIC AMERICAN
PUBLISHED EVERY THURSDAY MORNING, AT THE
SUN BUILDINGS,
—Entrance 128 Fulton st., and 89 Nassau st.—
ALSO, AT NO. 13 COURT ST., BOSTON, AND NO. 29 ARCADE, PHILADELPHIA.
(The Principal Office being at New York,)

By RUFUS PORTER.

Each number of this paper is furnished with from two to five ORIGINAL ENGRAVINGS, many of them elegant, and illustrative of NEW INVENTIONS, SCIENTIFIC PRINCIPLES, and CURIOSITIES; and contains as much Interesting Intelligence as six ordinary daily papers, consisting of notices of the progress of Mechanical and other Scientific Improvements,—American and Foreign Inventions; Catalogues of American Patents,—Scientific Essays, illustrative of the principles of the Sciences of MECHANICS, CHEMISTRY, and ARCHITECTURE;—Instruction in various Arts and Trades;—Curious Philosophical Expements;—Miscellaneous Intelligence, Poetry and, occassionally, Music.

TERMS.—"The Scientific American" will be furnished to subscribers at $2, per annum,—one dollar in advance, and the balance in six months.

Five copies will be sent to one address six months, for four dollars in advance.

Any person procuring four or more subscribers, will be entitled to a commission of twenty-five cents each.

TERMS OF ADVERTISING.—For 10 lines, or less, 50 cents for the first, and 12 1-2 cents for every subsequent insertion.

The Nothingness of Earth.

Genius,
Its fairest flowers,
Awhile they brightly bloom—
Yet fade, ere scarce we call them ours,
Upward they soar in lofty eagle flight,
Till death, with sickle sure, doth reap their blossoms bright.

Loves flame,
How pure it burns;
Yet oft its light grows dim,
From earth, each fond affection turns,
And, like the dove, it seeks above its rest,
Beneath a Saviour's pinions, there forever blest.

Fame's wreath,
How bright it twines
Its garlands round the brow,
Writing applause in magic lines;
Yet, when this life is o'er, oh what is fame?
What are its laurels, then? They're but an empty name.

Honor,
'Tis but of earth?
Its titled pageantries,
But for a time survive their birth,
Alike ambition's sweep, they pass away,
Their fondest hopes depart, their dazzling dreams decay.

Glory,
The martial lay,
It thrills the warrior's soul,
The swelling music melts away;
Hush'd is the bugle's blast, the cannon's roar,
The soldier's ear is mute, he hears thy voice no more.

Power,
Say where! oh where
Is laid thy rosy wreath?
Its hues, o'ershadowed now by care,
The hand lies still, which mighty sceptres swayed,
And strewn around, the fragments of the battle blade.

Earth! Earth!
Thy glories fade,
Thy riches take their flight,
Unerring Death thy paths invade,
Genius, Love, Honor, Glory, Power, and Fame,
His hand hath power to crush, with sure and certain aim.

Try Again.

'Tis a lesson you should heed,
Try again;
If at first you don't sueceed,
Try again;
Then your courage should appear,
For if you will persevere,
You will conquer, never fear,
Try again.

Once or twice though you should fail,
Try again;
If at last you would prevail,
Try again;
If we strive, 'tis no disgrace,
Though we may not win the race;
What should you do in that case?
Try again.

If you find your task is hard,
Try again;
Time will bring you your reward,
Try again;
All that other folks can do,
Why, with patience, may not you?
Only keep this rule in view,
Try again!

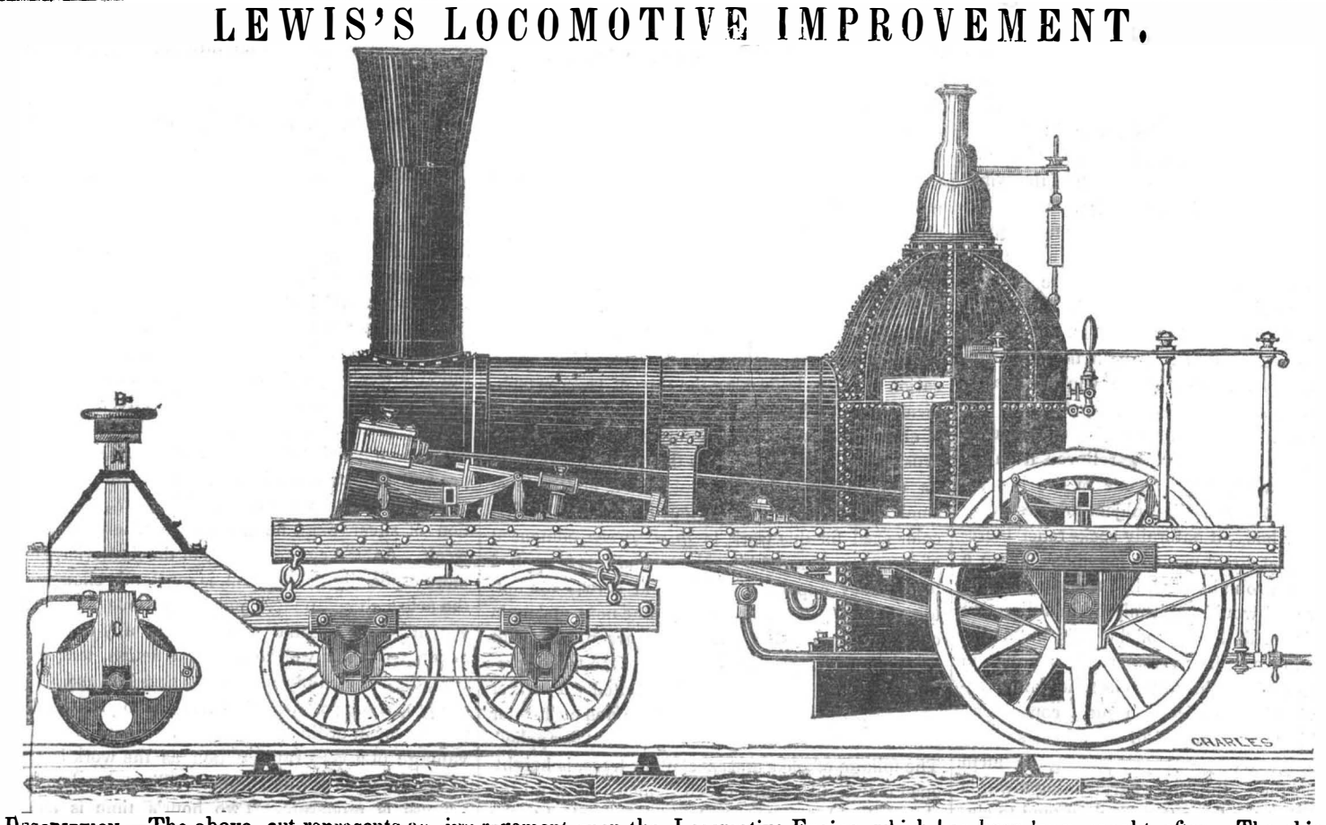
Bad Water.

I ask'd a man as I passed by,
Why he did Brandy drink—
"The water's bad," was the reply,
A poor excuse I think.

Add bad to bad, 'tis sure to make
It worse no one will doubt;
Such water, if compell'd to take,
Just leave the *poison* out.

DRESSING CHILDREN.—Children's clothes should never be so tight round the waist but that you may pass your hand freely between their clothes and body. We knew a lady who made a daily practice of doing so after her children were dressed. It is essential to the health of the child, and a saving to the pocket of the patent, in the way of Doctors' bills, &c.

LEWIS'S LOCOMOTIVE IMPROVEMENT.



DESCRIPTION.—The above cut represents an improvement upon the Locomotive Engine, which has been long sought after. The object of which is to prevent the Locomotive from running off the track. In all the former plans that have been tried, the great difficulty of success has been to make them harmonize with the motion of the Locomotive, caused by the undulations in the rails, thereby giving great friction and consequent derangement to the machinery. This simple contrivance consists of two wheels, called Safety Guide Wheels, of a peculiar construction, and is attached to the front end of the frame of the Locomotive, or truck, as the case may be; having three important motions as follows:—First; A vertical motion; any required pressure may be given these wheels to make them adhere more securely to the rails, by means of a set-screw operating upon a powerful spring; through the agency of this spring, they are made also to accommodate themselves, without retarding friction, to the motion of the Locomotive, caused by inequalities in the upper surface of the rails. These wheels have each two flanges, one to operate on each side of the rail. In this motion, the wheels act separately of [illegible] so as to remain safely upon the rail, by its fellow on the opposite one, where it is more securely held to the rail by the raised wheel, through the agency of the spring above-mentioned. Second: a horizontal and circular motion, to allow these wheels to take any required curve in the track. They act in these motions together, or jointly, being firmly connected with strong bars, having a moveable joint at their extreme ends, allowing, however, but little motion. Third—a lateral motion, to enable these wheels to conform to the inequalities occasioned by the displacement of the rails from their original position, either inward or outward, by means of frost, wear, &c. &c. The wheels move lateraliy; yet they do not revolve on their axle. The arrangement in the construction of these wheels, and their attachment to the Locomotive, is simple, very strong, consisting of few parts, and not likely to get out of working order.

H. L. B. LEWIS.

EXPLANATION OF THE PLATE.—This being a mere side view, the peculiarities of the improvement are not all fully represented; but it will be seen that the posts A rise from the forward end of the shafts; and the two posts are connected by an eliptic-spring (or feather-spring) and at the centre of the spring is a round vertical shaft, which descends to the frame-work, C, which is supported by the wheels; so that by turning a screw-nut or hand-wheel, at B, any required pressure may be thrown on the guide-wheels. The descending iron strap, D, is intended to carry a brush at the bottom, if required. Any information with regard to the sale of the right of this Improvement to Railroad Companies, may be had of George Gifford, Esq., 17 Wall st., N. Y. The models may be seen at 87 Walker st.

CHILLED BOXES AND STEELED JOURNALS FOR AXLES.—We have often been led to reflect upon the enormous expense for oil on many of our railroads; and to inquire if there is no remedy—no substitute for, or avoiding of, this enormous expense; but we have not been successful unless it is to be found in the adoption of the steeled journal and the chilled box. We were made acquainted with this peculiar article, about two years since, at Newcastle, Delaware, where they are manufactured, and had been in use for a lenth of time, as we were informed, with entire success. And we have been recently informed that a car with steeled journals, and chilled cast iron boxes, filled with palm oil, run from some time in April to December, without the addition of oil, or any other lubricating substance, and the journals, after this service, were in good condition. If this be so—and *we* can rely implicitly upon our informant—is it not for the interest of every railroad company in the country to adopt them? The first cost cannot be *much* more than for the ordinary boxes and journals—even though the journals of the axles are plated with steel—as the boxes are of iron, cast upon a chill, and are of course much less expensive than composition boxes.—*R. R. Journal.*

THE SLAVE TRADE.—The Liberia Herald states that the slavers at Gallinas are at length forced into a rather unpleasant predicament. They have been lately so closely watched by the cruisers as not to be able to ship any slaves since the Atalanta left. The Patuxent's cargo of three hundred was ready, and had been marched down to Cape Mount, as somewhere in the vicinity of which they would have been shipped in two or three days, if she had not been taken. This last hope being cut off, it seems, the slavers, in despair of an opportunity to ship, and unwilling to bear any longer the expense of feeding the slaves, emptied their barracoons, and gave away the slaves, or divided them among the head men of the county, to labor for them as an equivalent for their food, with the promise given that they should be promptly returned when there was an opportunity to ship them.

AMALGAMATION AND THE CHARIVARIC BAND.—There has been quite a stir recently in New Orleans in consequence of a marriage of a white man named Buddington, a teller in the Canal Bank, to the negro daughter of one of the wealthiest merchants. Buddington, before he could be married, was obliged to swear that he had negro blood in his veins, and to do this he made an incision in his arm and put some of her blood in the cut. The ceremony was performed by a Catholic clergyman, and the bridegroom has received with his wife a fortune of fifty or sixty thousand dollars. The *natives* serenaded him with such abominable music, that to get rid of their discord he paid them $400, to be used or charitable purposes.

CINCINNATI.—This thriving city is built on two tables of land, rising like terraces, the one elevated sixty feet above the river, and the other more than one hundred feet. The river is so variable as not to admit of wharves, but the numerous steamboats which are to be seen here at all times are moored to the bank, which is precipitous, quite too much so for convenience. The highest rise of the river above low-water mark, is about sixty feet. The city is regularly laid out, and surrounded on two sides by steep hills, formed by layers of earth and strata of gray fossil lime stone. On the upper table have been found teeth and other bones of the mastodon and mammoth. Some of the hills have been extensively quarried, for the sake of the stones they contain, and also to make sites for building. On one of them the citizens have erected an observatory, and furnished it with a valuable telescope; and Mr. Prentice, editor of the Louisville Journal, says, that the people of Cincinnati have monopolized the moon, forbidding all persons from looking at "the silvery queen of night," unless they pay tribute to themselves.

EFFECTS OF A SPREE.—Mr. Gough relates the circumstance of a young Englishman—the son of a person holding a high position under Government—who, being on a tour of observation through the United States, fell in with bad company at Rochester, and was induced, while in a state of intoxication, to exchange a large amount of gold half-eagles for what purported to be an equivalent in American bills. The next day he attempted to pass one of the notes, which was discovered to be a counterfeit; this led to the searching of his person, and other bills of the same description being found upon him, he was arrested, tried, and sent to the State prison, where he now is, for five years.

ANECDOTE OF GEN. KOSCIUSKO.—Kosciusko once employed a young man, whose name was Zeitner, to ride a few miles on the horse which he usually rode himself. On his return young Zeitner said that he would never ride his horse again, unless he gave his purse at the same time. Kosciusko asking what he meant, he answered, "As soon as a poor man takes off his hat and asks for charity, the horse immediately stands still, and won't stir till something is given to the petitioner; and as I had no money about me, I was obliged to make believe to give something in order to satisfy the horse!"

THE SUGAR BUSINESS.—The 25,000 hhds. of sugar manufactured in Louisiana in 1818, has now swelled to considerably more than 200,000 hhds., the product of 764 sugar estates, employing nearly 500 steam engines, and giving employment to over 50,000 hands. Some 500 cotton planters are now preparing to go into the sugar business. At the same rate of increase, Louisiana will be able to supply the whole Union in twenty years.

ST. PAUL'S CLOCK, LONDON.—A writer in the Hartford Courant thus describes the clock-works in the tower of this cathedral:—The pendulum is 14 feet long, and the weight at the end is one cwt; the dials on the outside are regulated by a smaller one within; the length of the minute hands on the exterior dials are eight feet, and the weight of each 75 pounds; the length of the hour hand is 5 feet 9 inches, and the weight 45 pounds each; the diameter of the dials is 18 feet 10 inches, and the length of the hour figures 2 feet 2 inches.

The fine toned bell, which strikes, is clearly distinguished from every other bell in the metropolis, and has been heard at the distance of 20 miles. It is about 10 feet in diameter and is said to weigh about 4 1-2 tons. This bell is tolled on the death of any member of the royal family, or the lord mayor, bishop of London, or dean of the cathedral.

ONE OF THEM.—"A little cobbler of the upper part of our city, is so anxious to be up in the world, that he will work industriously for several weeks until he has earned some six or eight dollars, when renouncing his apron and last, he dons a first rate suit, and takes board at the Astor, where he may be seen strutting about with the utmost confidence, giving orders like a lord to the servants, and exhibiting himself with a segar and opera glass on the Astor House steps, until his money runs out, when he again returns to his work-bench, to save enough to have another *blow out*, as he calls it."

EFFECTUAL REMEDY FOR A BURN.—Take one ounce of bee's wax, with four ounces of Burgundy pitch, simmered together in an earthen vessel, in as much sweet oil as will soften them into the consistency of salve when cool. Stir the liquid when taken from the fire till quite cool. Keep it from the air in a tight box or jar. When used, spread it thinly on a cloth, and apply it to the part injured. Open the burn with a needle to let out the water, till it heals.

A BIGGER HOLE.—A gentleman seeing a heap of rubbish in his court-yard, called a servent and asked him why he did not cart it away. "You have no cart, your honor," replied the servant. "Then dig a hole in the corner of the court and put it into that." "And where shall I put the dirt that I am going to dig out of the hole?" said the servant. "Why, blockhead, make a hole large enough to hold the dirt and rubbish too," replied the gentleman.

A NARROW ESCAPE.—Mr. Diven, of Elmira, was passing in his wagon along a road near Hornellsville, when hearing a loud noise, he looked up and found a large log tumbling down a hill, along the foot of which the road ran; he jumped out and escaped, but the vehicle was crushed to atoms.

PATENT LAWS.

(Continued from No. 24.)

An Act in addition to an act to promote the progress of Science and Useful Arts.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,—That any person who may be in possession of, or in any way interested in, any patent for an invention, discovery, or improvement, issued prior to the fifteenth day of December, in the year of our Lord one thousand eight hundred and thirty-six, or in an assignment of any patent, or interest therein, executed and recorded prior to the said fifteenth day of December, may, without charge, on presentation, or transmission thereof to the Commissioner of Patents, have the same recorded anew in the Patent Office, together with the descriptions, specifications of claim, and drawings annexed or belonging to the same; and it shall be the duty of the Commissioner to cause the same, or any authenticated copy of the original record, specification, or drawing, which he may obtain, to be transcribed and copied into books of record to be kept for that purpose; and wherever a drawing was not originally annexed to the patent and referred to in the specification, any drawing produced as a delineation of the invention, being verified by oath in such manner as the Commissioner shall require, may be transmitted and placed on file, or copied as aforesaid, together with certificate of the oath; or such drawings may be made in the office, under the direction of the Commissioner, in conformity with the specification. And it shall be the duty of the Commissioner to take such measures as may be advised and determined by the Board of Commissioners provided for in the fourth section of this act, to obtain the patents, specifications, and copies aforesaid, for the purpose of being so transcribed and recorded. And it shall be the duty of each of the several clerks of the judicial courts of the United States to transmit, as soon as may be, to the Commissioner of the Patent Office, a statement of all the authenticated copies of patents, descriptions, specifications, and drawings of inventions and discoveries made and executed prior to the aforesaid 15th day of December, which may be found on the files of his office; and also to make out and transmit to said Commissioner, for record as aforesaid, a certified copy of every such patent, description, specification, or drawing, which shall be specially required by said Commissioner.

SEC. 2. And be it further enacted, That copies of such record and drawings, certified by the Commissioner, or, in his absence, by the chief clerk, shall be prima facie evidence of the particulars of the invention and of the patent granted therefor, in any judicial court of the United States, in all cases where copies of the original record or specification and drawings would be evidence, without proof of the loss of such originals; and no patent issued prior to the aforesaid fifteenth day of December shall, after the first day of June next, be received in evidence in any of the said courts in behalf of the patentee or other person who shall be in possession of the same, unless it shall have been so recorded anew, and a drawing of the invention, if separate from the patent, verified as aforesaid, deposited in the Patent Office; nor shall any written assignment of any such patent, executed and recorded prior to the said 15th day of December, be received in evidence in any of the said courts in behalf of the assignee or other person in possession thereof, until it shall have been so recorded anew.

SEC. 3. And be it further enacted, That, whenever it shall appear to the Commissioner that any patent was destroyed by the burning of the Patent Office building on the aforesaid 15th day of December, or was otherwise lost prior thereto, it shall be his duty, on application therefor by the patentee or other person interested therein, to issue a new patent for the same invention or discovery, bearing the date of the original patent, with his certificate thereon that it was made and issued pursuant to the provisions of the third section of this act, and shall enter the same of record: *Provided however*, That before such patent shall be issued, the applicant therefor shall depostie in the Patent Office a duplicate, as near as may be, of the original model, drawings, and descriptions, with specifications of the invention or discovery, verified by oath, as shall be required by the Commissioner; and such patent and copies of such drawings and descriptions, duly certified, shall be admissible as evidence in any judicial court of the United States, and shall protect the rights of the patentee, his administrators, heirs, and assigns, to the extent only in which they would have been protected by the original patent and specification.

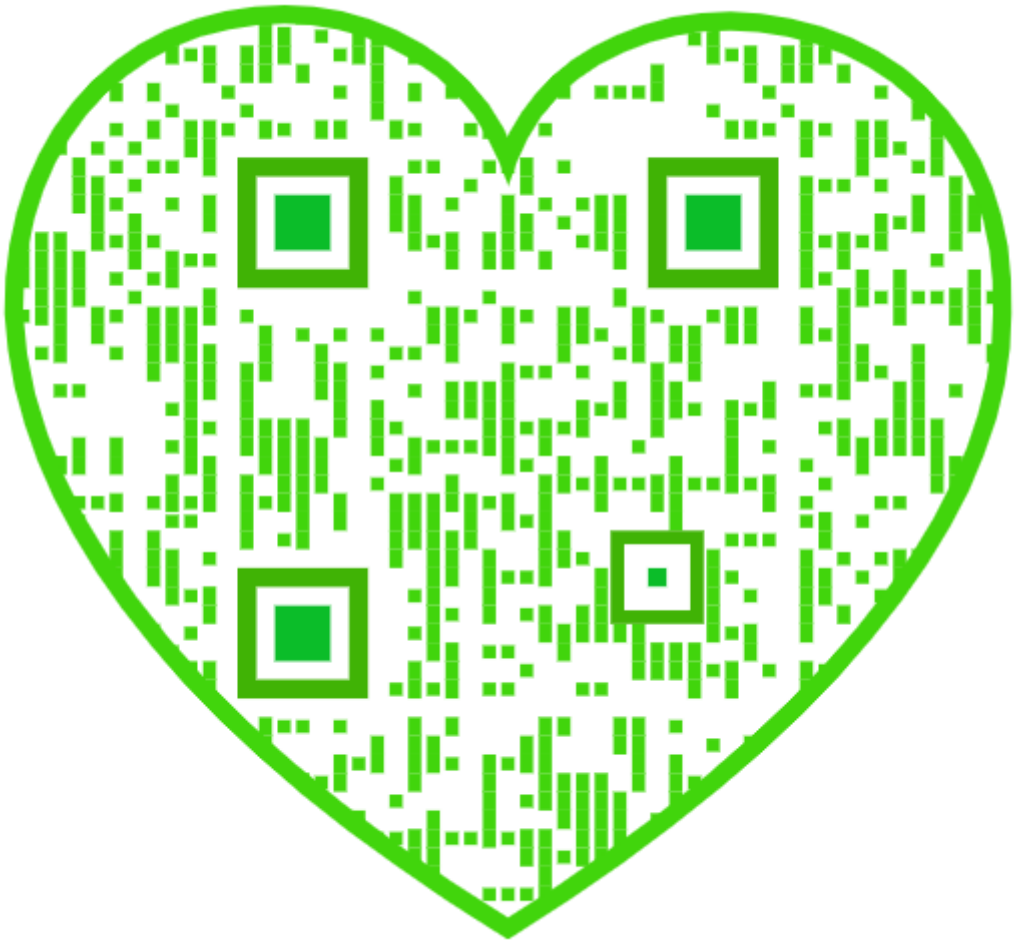
To be continued.

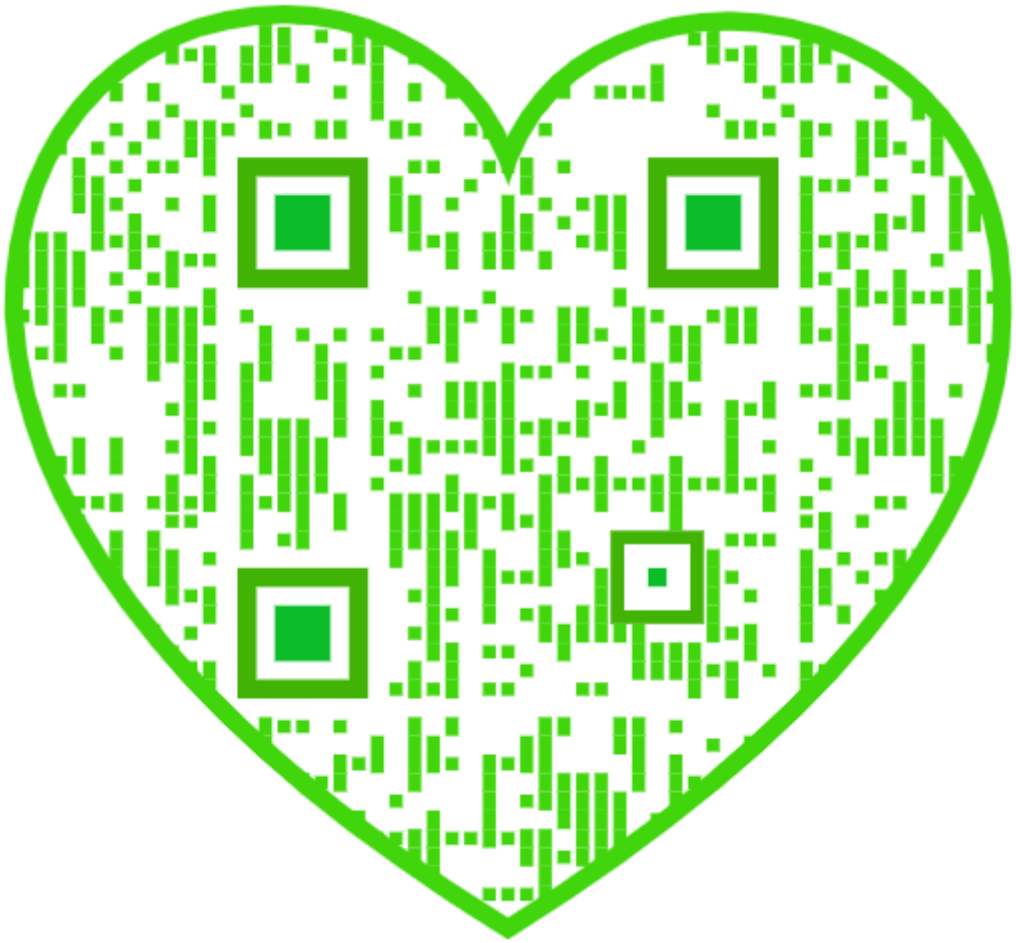
PAINTING IN CHARACTER.—Some of the old painters have fallen into ludicrous blunders in the accessories of their compositions, whilst their minds were employed in their principal subject. Thus Tintoreto, in a picture representing the Israelites gathering manna in the desert, has armed the Hebrews with guns! Breugholi, a celebrated Dutch painter, in a picture of the Eastern Magii, has dressed his figures after the fashion of his own country. One of the Indian kings appears in a large white surplice, with boots and spurs, and bearing in his hand, as a present to the infant Saviour, a model of a Dutch *seventy-four!*

ECLIPSES FOR 1846.—This year there will be two eclipses, both of the sun. The first is an eclipse of the sun, on the 25th of April, visible in all parts of the United States. The second is an annular eclipse of the sun, October 19th; invisible in the United States.

IRON OF GREAT BRITAIN.—Of the quantity of iron, South Wales produces 279 1-2 thousand tons. Staffordshire 210 1-2, Shropshire 81 1-4, Scotland 37 3-4, Yorkshire 33, Derbyshire 22 1-2, and North Wales 25. The quantity has increased 100,000 tons per annum.

© 1846 SCIENTIFIC AMERICAN, INC.





SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, MARCH 5.

POST MASTERS—Who receive this paper, will confer a special favor by mentioning the subject occasionally to scientific mechanics.

AGENTS WANTED.—Many travelling and local agents are wanted, to introduce and extend the circulation of this paper, in every principal village in the United States.

TO CORRESPONDENTS.—The communications of J. H. R. and J. T., will receive due attention. With regard to the crank-motion, we shall illustrate the subject by a diagram and demonstration, in two or three weeks. Several persons have sent us the problem of 19 trees in 9 rows of 5 in each; but as it is not original, having been before published, we must decline its insertion, lest the Post-office and mails should be too extensively patronized by a multiplicity of answers.

OUR NEXT NUMBER.—We have in preparation, and shall present next week, a set of large engravings, representing an invention which stands prominent among the great modern improvements,—Gen. Semple's Prairie Steam Car, calculated to run on the great Prairies of the West. This invention, in the practicability and success of which we have heretofore expressed our fullest confidence, is calculated to enhance the value of the Western land, and as such is particularly interesting to the public at the present time.

To our Patrons.

Having for six months persevered in encountering and surmounting the ordinary difficulties attending the introduction of a new paper, notwithstanding the embarrassment of severe casualties by fire, and the general want of confidence, induced by the early failure of many other papers, (most of which were commenced at random, and without either judgment, ability, economy, or industry,) we feel not only prepared to improve our paper, in its style and usefulness, but feel entitled to a tolerable share of confidence in its stability. We have in preparation a variety of interesting subjects, of new inventions with expensive engravings, which will be successively introduced, and we are confident in repeating, what has been often said before, that the volume will readily command more than the subscription price at the end of the year, or completion of the volume. The preparation of engravings, (to re-place those which were burnt) for the purpose of re-printing our first eight numbers, is in progress: and those numbers will be re-printed as soon as the amount of $300 (the estimated cost of re-printing) is received in the 2d semi-annual remittance from our original subscribers:—probably in two or three weeks. We have heard some complaint of the occasional failure of the papers in reaching their destination, which can only be attributable to the fact that this paper, being more attracting, is more liable to be purloined from the mails or Post Offices, than most others; but we can assure our subscribers that the papers are carefully mailed, and that moreover we are always ready to supply any deficiency of missing numbers, without charge. The winter is now past, and the revival of business has already commenced; and as our books have received an accession of one thousand new subscribers during the winter, we are confident in the anticipation that by the kindness of our friendly subscribers, in extending their influence in our favor, we may count a few thousands more in the course of the next six months. We close with a solicitation of promptness in making payments, as it must be well known that as we pay cash for paper, printing, &c., we can not furnish this paper beyond the amount advanced.

LARGE AND SMALL PAPERS.—We sometimes hear of people who, after admitting this to be an excellent paper for its size, nevertheless reject it on the plea that it is not so large in proportion to the price, as some other papers. We are truly sorry to hear that any of our countrymen are so deeply degraded in ignorance and stupidity, as to judge the value of a paper by its size merely. They might with equal propriety, require a piece of rich silk at the price of coarse muslin or calico; or appraise a piece of cabinet furniture by comparing its size with that of a barn:—as well, in fact, measure a bank note, to ascertain its value. We well know that every copy of this paper costs us three times as much as it would to issue a sheet of double its size, filled with such advertisements and commonplace useless matter as is found in many of the large cheap papers. We also well know that some of the smallest papers among our exchanges are worth double to others which are three times as large. We can offer no argument, however, to such people as make that plea of rejection, considering that they are wallowing in such depths of censurable ignorance, that a common-sense argument would be of no avail. Let them go.

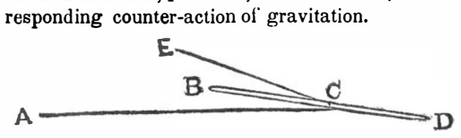
ÆRIAL NAVIGATION.—We would say to our original subscribers, that we have made arrangements to have an ærial ship constructed and put in operation in April or early in May: and that we shall promptly furnish certificates of stock, according to the original plan, to each original subscriber, within the present month: and that we will allow one dollar cash for said certificates in payment for the next volume.

MUSIC.—We have now got our font of musical characters (on a new system) complete, and should have inserted the scale of characters in this number, but for the press of other matter. We feel confident in saying, however, that in future, our readers may expect at least one piece of music in each number of this paper.

Science of Mechanics.

(Continued from No. 24.)

THE ART OF SAILING.—Although sailors are not generally considered and spoken of as mechanics, yet the spars, blocks, rigging, and sails, of a sailing vessel, are of mechanical construction, and the working and managing of them is strictly a mechanical operation, and as much dependent on mechanical laws and principles, as the working of a mill. The first sail ever used was probably a garment distended to catch the breeze; and it would require but little experience to establish the fact, that a vessel could be propelled by means of sails, in a direction different from the wind. It still remains a mystery with many, that the power of wind can be so applied as to propel a vessel in an almost opposite direction; yet, a mathematical calculation may be made by a very simple process, by which may be ascertained the force which is applied to a vessel in one direction, by wind, which is moving in another. The force, or pressure, of a wind whieh travels at the rate of ten miles an hour, against the surface of a sail placed square before it, is nearly eight ounces per square foot; or 50 lbs. on sail ten feet square. But if the sail be placed obliquely, at an angle of five degrees with the direction of the wind, the quantity of surface then presented to that direction will be but 70 feet, and the force applied, will be 35 lbs., in a directionat right angles, with the face of the sail, or 25 lbs., in a direction at right angles with that of the wind. As the sail is placed more obliquely, or is restricted by the position of the vessel to a direction more opposite to that of the wind the force becomes diminished, till reduced to 0. As a general rule, the position of the sail, should be at a medium angle, between the direction of the wind, and that of the motion of the vessel; by which arrangement, the sail becomes relieved from the pressure of the wind, by the forward motion of the vessel, as is illustrated by the diagram at the foot of this article; the direction of the wind being from A to C, against the face of the sail, B D, and the direction of the vessel, C E. Now if the motion of the sail be as rapid as that of the wind, the latter will effect no pressure whatever on the former; and it is plain, that if the sail has any motion whatever towards E, it becomes thereby relieved from the pressure of the wind; and it is one of the laws of nature, that whatever body is subject to pressure by a fluid or other body, it naturally seeks relief therefrom, in the most direct manner possible. Were a sail erected on a round vessel, like a basin, the motion of the vessel would uniformly be in a direction at right angles with the face of the sail; but as the form and keel of a sailing vessel, renders motion in that direction difficult, the sail seeks relief from pressure by moving in the direction most convenient Another subject to be noticed in the art of sailing, if the advantage to be gained, by placing the sail in an inclined position—the upper part leaning towards the wind, so that the force thereof may tend to elevate rather than depress the vessel. Some vessels have been constructed with the masts and sails so much inclined,—*raking* as it is called,—that with a fresh breeze, the vessel would not draw more than half of its usual draught of water, and in fact, an experiment vessel *may* be so constructed, as to sail on dry land, without wheels, or rollers. Some have erroneously supposed, that on this principle, a vessel might be made to rise from the water, and sail in air; but an experiment would quickly shew them, that the tendency of the vessel to rise, would cease, with the resistance of the water, in consequence of the motion of the vessel, becoming equal to that of the wind. But any degree of resistance in the horizontal direction, produces, with such sails, a corresponding counter-action of gravitation.



To be continued.

DR. LEWIS'S IMPROVEMENT.—It is gratifying to observe the progress of improvement in the modes of securing safety to passengers while travelling with the high velocities which public convenience requires to be adopted on our principal railroads.—The improvements projected, matured and proved by Dr. Lewis, extend far beyond what is represented on our first page, and will be presented in this paper in due time; but enough is here introduced to secure a train, under any speed, from leaving the track, as long as the rails keep their places on their foundations.

ARRAIGNMENT OF TIRREL.—Albert J. Tirrel, who, about two months since, murdered Maria Bickford, in Boston, and set fire to the house in which she resided, fled to New York,—embarked in a ship bound to Europe, but was driven back by stress o weather,—took passage for New Orleans, and was arrested on board the vessel before landing, and brought back to Boston on a requisition from the Governor of Massachusetts, has been examined before Chief Justice Shaw, and remanded to prison for trial, which is appointed to take place on the fourth Tuesday in March.

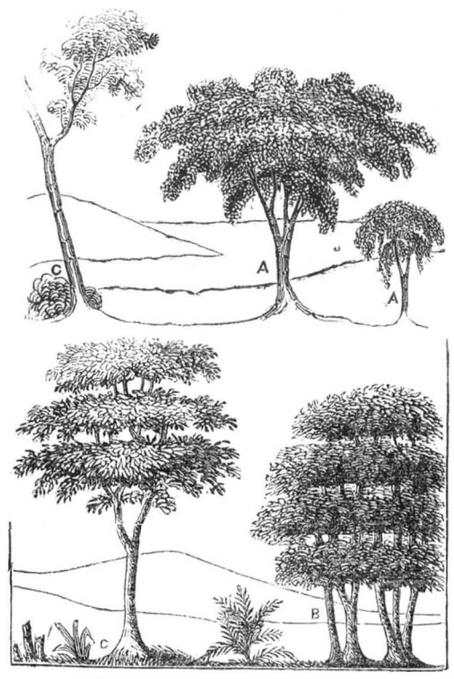
COMICAL LEGISLATION.—The Legislature of Kentucky has recently passed an act, forbidding, under severe penalties, all persons in the non-slaveholding states, harboring or aiding runaway slaves, &c.—To balance this act, the abolitionists recommend the passage of an act by our legislature, making it a penal crime for the people of Kentucky or any other state, to detain by force or otherwise any slave against his will. This is a great country.

MODERN WITCHCRAFT.—Dr. Wilson of the first Presbyterian Church of Cincinnatti, has lately preached and published a sermon, in which he proves to his own satisfaction and that of many others, that the arts of mesmerism, and those practised by the Swedenborgians, Roman Catholics, Shakers and Mormons, are neither more nor less than bona-fide witchcraft. His arguments appear very plausible.

The *Germantown Gazette*, is uncourteous in giving our name at length, under the head of *Quaint Grammar*. We did not mention *that* paper, in the article referred to.

The Art of Painting.

Continued from No. 24.



LANDSCAPE PAINTING ON WALLS.—In applying the foliage or leaves to the trees of the first distance, especially to the oaks and hickories, a peculiar brush is required, consisting of a large sized new paint brush of the fine soft kind, wound or bound with twine nearly half the length of the bristles, so that the extreme point may be reduced in size, and may be a little flattened by applying opposite sides alternately to the work; this brush improves, however, by being worn. With this brush, and by a little practice, a learner may soon be able to produce, by rapid sleight, representations of clusters of foliage similar (but on a large scale) to those represented in figures B and C, in the cut. The application of colors in forming the tops of trees, is technically termed *bushing* the trees, &c. The foliage of elms is more conveniently formed by a very large brush already half-worn; as the paint requires to be more extensively distributed in a multitude of small detached spots of various figures. The first color used for this work, is *dark green*, composed of chrome green and blue-black; and this is applied to the sides opposite the light, and across the bottoms of the clusters of the trees. The next, and main color, is chrome green, or forest green, and with this color the whole principal form of the tree is produced. These colors should be diluted with water so as to work very free and flowing; and each color must be allowed to dry before the next is applied. The foliage of oaks and most other trees, is heightened with light yellow green (lemon yellow a little changed with forest green,) which is applied to the fronts of the clusters, or prominent parts, but principally towards the light. It is common, however, in painting maples, to apply the green but slightly, and finish with vermillion, slightly heightening with horizon red; and in representing old oaks, a mixture of green with venitian-red is used, and yellow ochre for heightening. Hickory trees, and young [illegible] are [illegible] and this green may be also used discretionally on other trees. The next business in the process, is to paint the houses and vessels in the 2d, 3d, and 4th distances; also the fields, fences, trees, orchards, and forests; but as these divisions will require several illustrations, we shall defer them to next number.

(To be continued)

Railroad Intelligence.

The Providence and Worcester (Mass.) Railroad is located and under contract. The rails are to be of the T pattern, and manufactured by a company in Providence; contract price, $77,50 per ton. The length of the road will be 43 miles, and probably cost about $1,100,000. The contractors are to have all 1846 or rather until April 1, 1847, to complete the grading; and it is expected the road will be in operation in the summer of 1847.

BOSTON AND WORCESTER RAILROAD.—The capital stock of the Company, is $2,900,000. The receipts last year were from all sources, $500,618 95; expenditures $249,729 50. Thus there was a profit, including the undivided surplus, of $250,889 45, which gave a dividend of 8 per cent. on the capital, and left an uudivided surplus of $18,889 45.

NEW YORK AND ERIE R. R.—The Legislature of Pennsylvania have passed a bill to grant the right of way to this company, and there appears a determination to press forward this enterprise.

MEDFORD BRANCH R.R., from Medford, Mass., to intersect with the Boston and Portland road. This branch is already commenced and will soon be finished of course.

ATLANTIC AND OHIO R.R.—The citizens of Pittsburg persist and persevere in their exertions to have this road located and constructed to that city; and as we formerly predicted, they will persevere till they succeed. The Pittsburgh merchants, it is said, are about to sign a paper refusing to have any commercial intercourse with Philadelphia, unless the merchants of that city withdraw their opposition to the right of way. The interests of both cities are inseparable.

ROCHESTER AND NIAGARA FALLS R. R.—The route for this road has been surveyed and the report is exceedingly favorable. The distance from Rochester to the Falls is 76 miles. It is proposed to cross the Niagara river, a short distance below the falls, on a wire *suspension bridge*, of 700 feet span, and more than 200 feet above the water, and thus connect with the Great Western R. R. through Canada West, via Hamilton and London to Windsor opposite Detroit, and there to connect with the central railroad through Michigan to St. Josephs—and *ultimately* around the lake to Chicago *and the west.*

AN INTERESTING CONCERT.—An extraordinary musical festival was held last evening at the Broadway Tabernacle, in which one thousand young ladies beautifully dressed in white, assisted in the melodious performances.

Galvanism.

Continued from No. 24.

ELECTRO-PLATING.—Six circular batteries, or a plate battery containing six pairs of plates, connected consecutively, are required for ordinary gold plating; and the articles to be plated must be thoroughly cleansed by being washed in a weak solution of potash, and brushed with a jeweller's brush dipped in refined whiting and water. It is not requisite to specify particularly the proportions of the different solutions, to be mixed in forming a compound for imitations of jewel gold alloys; for the color produced depends much on the temperature of the solutions and the action of the batteries. In general, four parts of gold with two of copper and one of silver solutions, by measure, (prepared as directed in former numbers) may be a fair medium. It may be proper, in this business, to put the batteries in complete order, by cleansing them, and adding new saline solutions every morning; though a good battery will continue to work tolerably well two or three days without any other attention than that of replenishing the sulphate of copper, to keep it saturated. Be careful to see that all the connections are perfect, and let the platina pole-point be immersed in the compound solution in the font, before the articles to be plated, are put in. These articles, as before remarked, must be kept in contact with the negative wire, or with each other, while some of them at least are in contact with this wire; and the articles must be often turned or changed in their position. If the font contains a gallon of the solution, and the batteries are working strong, it will be sufficient for the pole-point to dip one-eighth of an inch deep in the solution; and a proper medium distance between the jewelry and the pole-point may be about four inches. If the alloy appears too yellow, or does not shew sufficient copper, the articles may be placed nearer to the pole-point, or the latter may be immersed deeper. If the silver does not sufficiently appear, the quantity of electricity may be reduced, or the articles placed at a greater distance from the positive point. If the solution is weak, by exhaustion or otherwise, or the operation of the battery is dull, the silver will appear to predominate, especially if the solution is cold. If the solution is kept very warm, the copper will appear conspicuous. When the solution and batteries are fresh and strong, a larger proportion of silver may be used, than when they are weak. As the circumstances of the batteries, and more especially the solution, is constantly changing, the artist should understand the various modes of varying the color and of correcting any improper action. But it is well to keep the action, temperature, &c., as steadily uniform as possible, and vary the proportions of the solutions so as to produce the right color in ordinary operation. There is no advantage in a very rapid action, as the work is not, in such case, so permanent nor brilliant as when the process is moderate. Two hour's time is short enough for permanently plating a watch or pencil case. We shall proceed to speak of various and peculiar colored alloys.

To be continued.

Illustrations of Chemistry.

(Continued from No. 24.)

NEUTRAL SALTS.—Most of the acids readily combine with the metals, earths and alkalies, forming substances widely different both in appearance and properties, from either of their constituents; and these are termed *Neutral Salts.* These salts are generally soluble in water; but some of them are not only insoluble, but are so hard, permanent, and durable, as to be used in building, and in the construction of vessels and implements peculiarly adapted to withstand fire, water or acids. The ordinary method of producing the neutral salts artificially, is to dissolve the metals or alkalies in an acid, and evaporate the solution till it is reduced to a dry crystaline substance, usually transparent, but some kinds are densely opaque. They are named according to the ingredients of which they are composed; as, for instance, the combination of sulphuric acid with iron, is denominated the "sulphate of iron;" and that of muriatic acid with soda, is called "muriate of soda," &c. The insoluble substance known as gypsum, or plaster of Paris, is a combination of sulphuric acid with lime. The hard and shining black stone, which is much used in building in Virginia. is a combination of lime with the carbonic acid.

EXPERIMENTS.—To a small quantity of sulphuric acid (in a tumbler or porcelain cup) add an equal quantity of water, and as much iron (iron filings is best) as the acid will dissolve. Place the cup over some coals, or on a hot stove, where it will boil gently, and in a few minutes, crystals of a green color will be formed, which is the substance usually known as *copperas.*

Dissolve some filings of copper in sulphuric acid, by applying a moderate heat. When this solution is evaporated, beautiful crystals of *blue vitriol* will be produced.

Dissolve pure white soda in muriatic acid and evaporate the solution, and white semi-transparent crystals will be readily formed, which will prove by the taste to be common table-salt.

Dissolve a piece of pure silver in nitric acid, and the solution will be transparent and colorless. Add a litte muriatic acid to the solution, and the muriatic will instantly combine with the silver, rendering it opaque and insoluble.

Mix together the saturated sulphate solutions of iron, copper and soda; evaporate the compound and three distinct classes of crystals,—blue, green and white,—will be produced without any mixture or combinations with each other.

(To be continued.)

THE INMAN GALLERY—now open at 322 Broadway, is, in many respects, superior and more interesting than any other gallery in this city. It receives extensive patronage, as it richly deserves; some of the pieces are superior to anything of the kind we have ever witnessed; a single portrait might be selected, the sight of which is worth the price of a ticket. No citizen should neglect to visit it.

VARIETY

Every body knows that the wonderful operation of the magnetic telegraph is effected by means of *batteries.* It is now reported that the *Battery* at the foot of Broadway is to be used for telegraphic operation.

A shower of live worms, extending several miles, has lately fallen upon the snow, above Concord, N. H. This circumstances is well authenticated, and has excited serious alarm.

The English ship Charles is reported to have been recently caught in a violent storm during which she scudded round for four days in a hurricane circle, thus proving the Espy theory of storms.

On Thursday last, at Exeter, N. H., the thermometer indicated eighteen degrees below zero, at 7 o'clock, A, M. It was 7 below zero, in this city, on Friday morning.

The citizens of Boston, Eng., have sent an address to the citizens of Boston, Mass., expressing much good will, and strongly deprecating the occurreuce of hostilities between the two nations.

A Wilmington, S. C., paper states that the trees are putting out their foliage, and that several kinds of flowers are in full bloom in the gardens, in all the beauties of Spring.

One hundred thousand chairs, and sixty thousand pails, have been transported over the Fitchburg Railroad, from the manufactories in Worcester County, within the last three months.

Messrs. Fisher & Martin, of Newport, Me. have discovered, and are in daily practice of a method of uniting cast steel to cast iron. We have seen the effect, but the art is kept a secret.

There is nothing novel in these magnetic inventions, said a baker; we have always used *lightning* in making bread. True, replied old Dorothy, you have practised *lightening* your weight at least.

The venerable Albert Galatin estimates the cost of a war with England at $65,000,000 a-year, besides causing a reduction of 50 per cent. in the U. S. revenue. Not very desirable.

A lady in Boston having taken a severe cold, complained to her husband that it was difficult and painful to bread. "I would not try my dear," was the soothing reply of the kind husband.

An exchange paper announces that great improvements are to be made on the Niagara Falls. Whether the height and perpendicular descent is to be increased, it does not inform us.

A Portland paper has announced the introduction of boot-soles made of sand, and which are highly recommended for their anti-slipping property, during the present season of ice.

The last number of the "Massachusetts Cataract," came to us blank outside. We are sorry to find that its worthy publisher is dealing or indulging in *White-face.*

It is proposed and recommended by certain citizens of Providence, to fill up the large cove or pond above the Central Bridge, and make a beautiful park and parade ground thereon.

The Paris papers report the death of a merchant in consequence of swallowing a live mouse. If he had swallowed a cat immediately after it, he would probably have been cured.

The Tribune judiciously remarks, that it is very singular that the colored young men of New York, have the only Lyceum (the Hamilton) and course of lectures now regularly going forward in our city.

The lady who fell upon her back on the icy sidewalk of Washington street, the other day, is said to have immediately given thanks to her *bishop* that she was not hurt by the fall.

Some of the newspapers in Yankee-land have adopted the practicice of publishing regular notices of courtships and engagements in their vicinity, as well as marriages.

A late Corpus Christi (Texas) paper contains a notice of religious exercises, on the following Sunday, and a theatrical play, with songs and dancing, at the same house in the evening.

A new process has been lately put in practice in Pennsylvania, for the manufacture of ice; we think it much cheaper, however, to cut it out of the ponds ready made.

A manufacturer of toys in London recently bought about $15,000 worth of doll's eyes—probably some 3,000 bushels—at one purchase. Doll making is a great business.

A Virginia paper states that a vein of rich copper ore has been found in Orange county, in that State, fifty feet in width, and lying *five miles* in length.

There are in Thomastown, Me., 132 lime kilns, which yielded upwards of 600,000 barrels of lime the last season, which was sold at the kiln for $411,840.

Lakes Huron, Michigan and Superior, are in some places 900 feet deep; sinking about 300 feet below the level of the sea.

In the time of Augustus a pound of wool, dyed in Tyrian purple, could not be had for less than the small sum of $140.

The value of produce and merchandize passing through the Erie Canal last year, was upwards of $45,000,000.

The citizens of Wheeling, Va., are in earnest on the subject of a wire suspension-bridge over the Ohio river at that place.

© 1846 SCIENTIFIC AMERICAN, INC.

Eor the Scientific American.

The Æolian Harp.

Sweet Harp of the wild wind,
Thy soft and mellow strain,
Sweet as the notes of Cherubim,
Is wafted o'er the plain.
It speaks of joy and gladness,
It tells of mirth and glee,
Where steps of airy lightness
Move to music wild and free.

Now a wail is on the night wind,
That is howling o'er the plain,
And its numbers, wild and mourn
Tell of sorrow and of pain.
They speak of storms and tempest.
Wild horror and despair,
And the numbers chill the life blood,
For the dirge of death is there.

Harp! oh, Harp of the wild wind,
Wake! O wake thee, in thy power,
For a spirit filled with fury,
Rules the tempest in this hour,
While the dread roll of the thunder,
And the fierce rush of the blast,
In angry tones now threaten
That this moment is thy last.

Hark! a strain of fairy music,
Softly rising on the storm;
'Tis thou, my Harp, who poureth forth
Thy sweetest lay of song,
And answerest, to the Storm King,
Who his fury pours on thee;
Thy rage can but awaken
All my notes to melody.

The Wind.

I'm monarch of the land and sky,
And of the sea;
A palace-cloud I dwell on high,
And walk me free;
The sun unfurls on me each fold
Of living light and crimson gold—
The stars, night's glittering jewels unrolled,
Shine bright on me.

I ride me on the tempest's back,
In the thundering sweep;
I scourge the clouds, from scowling black
To crimson deep;
And wild I laugh to hear the crash—
To see the clouds in anger clash—
And lightnings from their rent breasts flash
Down Heaven's broad steep.

Across the sun's bright face I fling
An inky shroud,
And even next the moon I sing
My war-song loud,
And o'er the vessels of the night,
That sail through heaven's blue sea of light,
With silver cord and penant white,
Hang many a cloud.

I humble low the pride of man
Upon the dust,
When fearlessly my arm I span
Round earth's dark crust,
And crack his bones like ozier band—
And tumble down his pyramid's grand—
And dash them in the air like sand,
With a strong gust.

I oft the earth, "green vested," walk,
In hallowed calm—
Like music sweet, is heard my talk,
Like seraphs psalm,
When oft I lift my perfumed wing,
The drooping flowers up gladsome spring,
Their petals ope and quick drink in
The sweet'ning draught.

I stretch me on the beam-worked cloud
And take my rest,
There calm-relied, I lie in sleep,
While stars their vigils o'er me keep—
'Till morn, when down I freshened leap,
On the wave's crest.

And but for me the ocean grand,
Would nurture death,
And spread disease upon the land,
Where chained my breath;
But for my life-diffusing power,
Each human bud—each human flower,
Would deck the earth one short-lived hour,
Then droop beneath.

MEANNESS.—Of all possible vices which pervade this vicious world, meanness is the meanest. Lying, stealing, and swindling, if practised according to the customary rules, are decidedly honorable in comparison with that peculiar littleness of soul, in which some men will act against their own interests, in their sedulous efforts to avoid contributing the least possible patronage or benefit to others.

A COINCIDENCE.—A New Haven physician states that two ladies, strangers to each other, recently chanced to meet at his office, and for some time conversed. He subsequently ascertained that one of them was the sister of Osburne, who was lately murdered, and the other was the sister of Potter, who is now under sentence for the murder.

PUT THAT AND THAT TOGETHER.—It is stated that during the recent severe snow storm, 135 destitute persons sought shelter from the storm in the several watch-houses of this city. Soon after this the Board of Assistants appropriated $500 to purchase a *stand of colors* (which should not probably cost $75) for the "Washington Guards."

ABSENCE OF MIND.—The last case we have heard was that of a lady who carefully laid her mop in he cradle and wiped up the floor with her baby. She discovered her mistake when she attempted to wring it.

Report of a Committee of the National ASSOCIATION OF INVENTORS.

The undersigned, a Committee appointed at a regular meeting of the National Association of Inventors, held at Columbia College in the City of New York, Feb. 2, 1846, to examine the invention of certain improvements in Rail Road Machinery by H. L. B. Lewis, of the City of New York,—beg leave to report: that they have discharged the duty thus assigned to them, and after a thorough examination of the models, drawings, and illustrations of said inventions, they are fully of the opinion that the improvements are such as may be advantageously applied to practical use; and well merit the attention and consideration of those interested in Railroad transportation. The alleged improvements consist first, of a pair of *Safety Guide Wheels*, placed either in the front or rear of the locomotive, or in both, as may be desired. These wheels are attached to a frame-work, which is firmly attached to the frame of the locomotive, and have a vertical, a horizontal, and a lateral motion, so as to admit of their adapting their position to any curve in the track, or any inequality on the top or sides of the rail, and are made with a double flange—one flange running on each side of the rail.

The vertical motion of the wheel is governed by a spring, which connects them in such manner that when one rises, in passing over any obstruction on the rail, the other is held down more firmly to the rail by the increased action of the spring—while the wheel thus passing over the obstruction, is again brought down upon the rail, by the agency of the spring with much greater velocity than it would be by gravity alone. The horizontal motion of these wheels, is to enable them, with very little impingement, to follow any curve in the track. The lateral motion of each of the wheels which is independent of the other, is to admit of their readily, and with very little friction, passing any protuberance or inequality on the sides of the rail. The object of this part of the invention is to secure greater safety by preventing the locomotive and cars from running off track. The second improvement of the invention is the construction of wrought-iron cars, adapted to the use of large burden wheels. The cars are to be hung low, with the wheels on the outside, at the ends of the cars. The object of this arrangement is to give speed, and at the same time promote the comfor of passengers. And the Committee think that this object may be attained by the means proposed as the use of large burden wheels will diminish the friction on the axle of the wheels require less propelling power, tend to prevent damage to the track and be attended with less jar to the cars. The third improvement proposed by the inventor consists of certain plans for the construction of the locomotive driving wheels, which are to secure the tire on the wheels, by means of clamping instead of bolting, thereby rendering the wheel more firm and durable and at no extra expense. The Committee will add, that models and illustrations of these inventions are to be seen at No. 87 Walker street, N. Y., all of which the committee most respectfully submit.

GEO. GIFFORD,
ISAIAH JENNINGS,
JOHN JOHNSON, } *Committee.*

We do hereby certify that the above is a true copy of a Report now on the files of the National Association of Inventors. JAS. RENWICK, *Pres't.*
Joseph P. Prosser, jr., *Sec'y.*
New York, March 2nd, 1846.

"THE LITERARY EMPORIUM," and the "YOUNG PEOPLE'S MAGAZINE."—These two literary gems (for March) are received and are, in style, embellishments and contents, equal to the previous numbers. The former presents a rich panoramic view of the city of Damascus, and the latter a fine fancy print of "the Fisherman's Daughter;" and each has a richly colored botanical print. Both are filled with excellent, interesting, and instructive pieces, calculated to improve while they entertain. Only $1 per annum for each work; and could a specimen of each be shown to every family in the United States, it would insure the publisher (Mr. J. K. Wellman, 118 Nassau st.,) at least 200,000 subscribers.

NEW PROPELLERS.—We feel constrained to notice another swelling report, now going the rounds of the press, concerning a new propeller, invented by somebody somewhere, by which a speed of *twenty-five to thirty miles per hour* is promised with all confidence. It may indeed be a valuable invention; but we have but a light opinion of this running thirty miles an hour in the mere ideas of the inventor before the invention is put in practice. We have seen too many such inventions.

PITMAN'S PHONOGRAPHY.—For the benefit of those who cannot attend the evening class, particularly ladies and gentlemen engaged in teaching, an afternoon class will be formed in the Basement room under the church of the Divine Unity, (entrance on Crosby-st. between Spring and Prince,) on Friday, 6th inst., at 4 1-2 P. M.,—when a free introductory lesson will be given, explaining the objects and merits of the system. All who feel the need of a *legible* and *practical* system of Short Hand Writing, adapted in every respect to *daily* and *social* use, are invited to attend. HENRY J. HUDSON.

IRON MANUFACTURE IN PENNSYLVANIA.—There are twenty-three furnaces now in full blast in Pennsylvania, and six more are in progress and nearly completed. When these are put in operation, the quantity of iron produced per week, is expected to amount, in the aggregate, to 1,750 tons per week As the iron business is rapidly increasing it may be reasonably expected that in a short time the demand for iron in this country will be wholly supplied by the American manufactories.

THE YOUTH'S CABINET, for March, is a beautiful number, containing six embellishments, besides music, and an interesting variety of reading matter, moral and instructive. Published by D. A. Woodworth, 135 Nassau street, for $1 per annum.

ANNEXATION OF CANADA.—A very large meeting was lately held at Montreal at which resolutions were adopted, favorable to annexation to the United States!

Arts and Trades.

Under this head we purpose publishing a series of articles, in the course of which we shall endeavor to not only explain the general principle, but communicate the light of some degree of improvement in many of the most popular mechanical trades practised in this country, though we may not be expected to notice *all* the improvements in *all* the different trades. We solicit intelligence of new improvements, however, and design to make this paper a general medium for mechanical intelligence.

MANUFACTURE OF FILES.—The steel used for this purpose is brought to the required shape by being forged in the ordinary way, and left in a soft or anneated state. It is then ground smooth on a stone, and being placed on a piece of lead on an anvil, and secured in its place by a leather strap in a manner similar to that of a shoemaker in holding his lasted shoe, the teeth are cut by a small smooth-edged chisel. In this work the file-cutter commences at the point of the file, progressing back towards the handle, and applies a single stroke of a hammer to the chisel, for each cut, lighter or heavier according to the fineness of the file. If the file is to be cross-cut, it is again put on the stone to take off the sharp edges of the teeth, and is then subject to another similar process of cutting; the chisel being placed across the creases or furrows first made. The file is tempered by heating it to a full red, and plunging it endwise in water containing a small quantity of lime and charcoal.

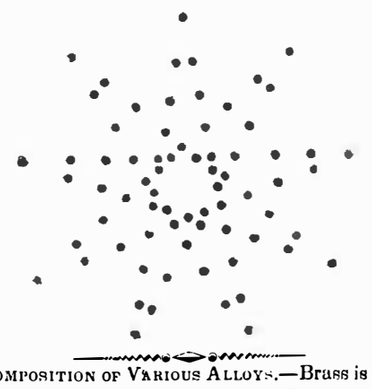
TO ANNEAL OR SOFTEN STEEL.—If the articles to be annealed are small, put them into an iron pot, and fill the interstices between the several articles, with iron filings: the pot may be filled with them if occasion requires, but each article should be embedded and covered with the filings. Heat the whole to a blood-red heat, and keep it so for several hours, if convenient, and then suffer it to cool gradually.

(To be continued.)

Answers to the Military Puzzle.

We have received two correct answers, one of which, from E. W. Van Wie, of Albany, we present below. The other is from N. P. B., of New Bedford, Mass., and is quite ingenious, but not quite so well arranged as this, nor so regular. N. L. C. has given no definite platoons; and M. T. C. has placed only six men in each row, though there are 12 in each platoon, rank and file. We shall probably present the answer of N. P. B, next week.

P. S. A correct answer from L. Fenner, Cranston, R. I.. and W. H. Hepburn, of Reading, Pa., received after the above was in type.



COMPOSITION OF VARIOUS ALLOYS.—Brass is composed of two parts of copper to one of zinc; or copper and calamine (an ore of zinc,) equal quantities Pinchbeck consists of from five to ten parts copper and one of zinc. Bell metal is composed of three parts copper and one of tin. Gun metal, nine parts copper and one tin. Tombac, sixteen parts copper and one zinc and one of tin. The composition of pewter, is seven pounds of tin and one of lead, four ounces of copper and two of zinc. That of type-metal is nine parts lead two parts antimony and one of bismuth. Solder, two parts of lead with one of tin. Queen's metal, nine parts of tin, one of bismuth, one of antimony, and one of lead. Jewel gold is composed of twenty-five parts gold, four parts silver, and seven parts fine copper. In forming metallic compounds or alloys, it is proper to melt such of the ingredients as are the least fusible first, and afterwards add the others, stiring them briskly till they are thorougly commixed.

A DIGNIFIED CALLING.—There are several branches of business practised in the Eastern States, which, though truly honest, and as such, honorable, but which are nevertheless esteemed rather low business; such, for instance, as clam-digging, dog-killing, hog-skinning, &c., but the business advertised by William Cambrel, in a Southern paper, is in comparison excessively contemptible; and, without doubt, this advertiser is most heartily despised even by those who occasionally employ him.

Negro Dogs.—The undersigned having bought the entire pack of Negro Dogs, (of the Hay's & Allen stock,) he now purposes to catch runaway negroes. His charges will be three dollars per day for hunting, and fifteen dollars for catching a runaway. He resides 3 1-2 miles north of Livingston, near the lower Jones' Bluff road.

WM. CAMBREL.

PROMPT PUNISHMENT.—It may be rather a consolation to the public, than otherwise, that whenever two railroad trains run against each other—which of course can not occur but through some censurable negligence,—the proprietors are sure to suffer severely in the damage to the cars, if not otherwise. And it is to this circumstance that travellers are indebted, in a great measure, for their safety in this mode of travelling. These remarks are elicited by the report that on a Michigan railroad, two several smash-ups occurred in one week, breaking up nearly every passenger-car in each train. We hear of no serious injury to the passengers.

GRAHAM'S MAGAZINE.—The March number of this splendid and popular work, is embellished as usual in first rate style, and contains, in addition to 44 large pages of literary matter, several pages of excellent music. For further particulars, call at the office (Tribune Buildings in New-York, or 98 Chesnut-st. Philadelphia,) and procure a copy.

Deferred Articles.

The following interesting articles have been on hand several weeks, waiting to find a place in our columns. We don't like to make them wait longer.

THE OREGON RAILROAD.—Mr. Whitney has published in the Union, a reply to objections made to his project of building a railroad to Oregon, and states some important facts. He is in favor of terminating the railroad at San Francisco, in California, in case that territory should be *annexed to the Union.* His principle is to build the road by means of the public lands on its route, taking for this purpose 36 miles on each side of it for the whole distance, and he says there is no other means by which it can be done. Excepting at the beginning of the work, he expects to raise means by the sale of the lands to carry it forward; and the building of the railroad itself would produce a demand for it. He does not ask that the lands be given to him for his personal use, but as the agent for the execution of the work. "It is but a simple work; its extent need not frighten us; for we have already more than 5000 miles of railroad in successful operation."—"Can a project be too magnificent, which only requires for its accomplishment the labor and industry of man, with the prospect that both will be profitably rewarded?"

Mr. Whitney yields his condition that the balance of land, not required for the work, be given to him, and leaves it to the people to give him anything or nothing. All he asks is, to be allowed to be their instrument to accomplish this great work: that "is enough—I ask nothing more." The road is to be entirely free, except so far as tolls are necessary for its operation—and these to be regulated by Congress.—*Bunker Hill Aurora.*

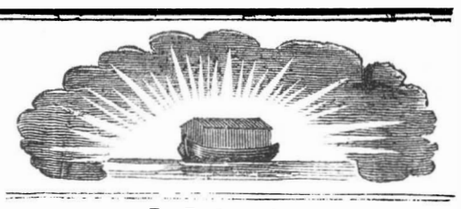
LINEN MANUFACTURES.—The Belfast Signal, a few weeks since, contained some valuable hints from a correspondent, in regard to the raising of flax, and the manufacture of linen, in this State. Mr. Billings' recent invention of a machine for preparing the flax, whereby nine-tenths of the time and labor are saved, will give a vast impetus to this business; and the prices of the fabrics will undoubtedly be reduced so low as to make them a general article of consumption among all classes of the people. The soil and climate of Maine, it is said, are as well adapted to the flax culture as those of any other country; and we would advise our farmers to go into it. If our tariff is suffered to continue its protection, the manufacture of this article will very soon attain a vigorous growth among us; and there is no reason why it should not be as extensive and successful as that of cotton.

The manufactures of flax imported into the United States during the year ending 30th June, 1844, amounted to $4,492,826; and in the next year to $5,246,219. What the domestic manufactures may have been, we have no means of knowing. If the cost of these fabrics can be reduced, so as to bring them into general consumption (as has been the case with cotton,) a new and vast field of labor will be opened to our northern agriculturalists.—*Kennebec Jour.*

MICHIGAN INTERNAL IMPROVEMENTS.—The Detroit Free Press announces that the Central Railroad is completed to Kalamazoo, 145 miles from Detroit. It states that there are 214 miles of railroad finished and in operation. The Central road 146 miles, and the Southern 68 miles; 72 miles of which have been added within the last 22 months. The receipts on the railroads, for the last two years, are $536,905 54. From the Central, $413,916 41; from the Southern, $123,076 13. The present cost and value of the railroads and furniture of the roads and shops, including materials on hand, is $3,363,580 37. Central road, $2,238,289 72; Southern, $1,125,590 05. The receipts on the railroads during the past year, are $276,810 71:—Central, $214-075 00; Southern, $62,735 62.

A HOUSE AND FAMILY SAVED BY A DOG.—Mr. Solon E. Bettes, of Sandfield, being about to go out for an evening visit, directed his eldest boy, a lad of some ten years of age, to put wood into the stove, and leave a good fire when he and the other children went to bed, and to have the kindlings ready for the morning fire. The boy did so, but put the kindlings under the baker, so that the fire communicated to them from the stove. When the fire communicated to the kindlings the children had all gone to bed in the chamber, but there was a faithful watchman below. Mr. B. had an intelligent spaniel, which, seeing the fire communicate to the wood, and from that to the floor, mounted up stairs to give the alarm, but finding that he could not make the boys understand him, he laid himself down on one of their beds for a few seconds. As if aware of the increasing danger, he soon returned to the fire again, and on his third visit to the chamber he succeeded by his barking and howling in awaking the boys, all of whom had fallen asleep in the mean time. The smoke soon convinced them that the house was on fire, and when they entered the room below, where the fire was spreading, they found the faithful sentinel at his duty, striving to arrest the progress of the flames with all his energies, and scattering the burning brands with his teeth and paws in every direction about the floor, thinking no doubt, that if he could not procure water this was his last resort to save the house. It seemed that he had been doing the same before he succeeded in arousing the boys. The fire burnt a large hole through the floor before the boys succeeded in extinguishing it.—*Springfield Post.*

ECLIPSE OF THE SUN.—Mr. A. Smith, Teacher of School No. 12, has published a beautiful colored map, representing the solar eclipse which will occur on the 25th of April. The relative positions of the sun and moon, and the moon's shadow upon the earth are plainly shewn, and the map is accompanied with a full explanation of eclipses in general, and of this in particular. Altogether, it presents much useful and interesting instruction. Any person enclosing one dollar, directed to Asa Smith, 163 West 21st street, New York, will have four copies sent to their address: if sent by mail the postage will be the same as a newspaper.



Be Industrious.

There is no situation in life, which affords so much comfort and enjoyment as that of having body and mind constantly employed. Although there appears to be in the minds of most people a natural antipathy to labor, yet it is well known, and generally admitted by those whose circumstances have at times required incessant labor, and at other times perfect leisure and exemption from care, that there is vastly more enjoyment in industry than in idleness. It is the plain and express duty of every person to be industrious, and to improve every hour of their time, in the full exercise of their natural strength and faculties, in the most useful employment. No circumstances in life can furnish an excuse for a neglect of this duty. We would not, in these remarks, wholly proscribe recreation; but a well-balanced mind will find the most healthy and pleasant recreation in exercises which are decidedly useful and beneficial to themselves and others. For example: a boy takes pleasure in the exercise of hauling a little cart loaded with earth or stones, though there be no advantage in the removal of those articles; but does he find any less pleasure, under a consciousness of doing good, when removing the same materials from a place where they were an encumbrance, to another place where they are wanted? Certainly not. Or if a miss finds pleasure in walking in the fields, that pleasure is rather enhanced, than otherwise, if she can accomplish something useful by the walking. It is a common thing for men, during their labor, to derive an enjoyment from the anticipation of the pecuniary compensation which they are to receive therefor but this kind of enjoyment is far inferior to that of one who rejoices, during his labor, in the consciousness of performing a duty and a sense of Divine approbation. The scriptures of Divine Truth, which alone furnish perfect laws and rules of duty, and guide to happiness, contain many injunctions to industry and diligence in business; and that for the purpose not of acquiring wealth, but of doing good. The word "avarice," is not to be understood to imply a desire of earning or gaining, but of retaining or hoarding what has been acquired of wealth. The three several injunctions—"Let no man seek his own [merely] but every man another's wealth;" "let him labor, working with his hands the thing that is good, that he may have to give to him that needeth;" and "love thy neighbor as thy self," may very properly be considered in connection. The line of duty between avarice and extravagant liberality, has never been fully defined. It appears reasonable to many pious-minded people, that a mechanic should own at least a set of tools; and that by the same rule, a farmer should own a farm; a merchant a store; and that all should have houses to dwell in: and this principle extended, may lead to the most extravagant avarice. But our subject is the duty of industry and diligence in business, independently of circumstances; and if any man entertains and cherishes the true principle of sympathy and benevolence, deriving more pleasure in relieving the sufferings of his fellow mortals, than in the possession of such articles of wealth as are not utterly indispensible, there will be no danger of his being either idle or miserly. But the neglect of improvement of an hour of time is as decidedly a crime, as the wasting of money or property; and the neglect of doing good to others when opportunity occurs, is decidedly incompatible with the character or hope of a true Christian, for "he that knoweth to do good and doeth it not, to him it is sin."

Forgivenness.

There is no virtue of the human heart which so much adorns the life and character of an individual, nor no duty more enjoined upon the christian than that of forgivenness. For proof of this, look at the examples of Christ, who, while suffering upon the cross, by the hands of his enemies, exclaims in the anguish of his soul, "Father forgive them, for they know not what they do." How noble the sentiment!—How pure its author! And shall man "created but a little lower than the angels," fail to imitate the example of him in whom there was "no guile." Or shall he so debase himself towards his brother man? So prone are we all to stray from the path of rectitude and duty, that we find ourselves often called upon to forgive the faults and errors of those who, in an unguarded moment, do us an injury, and unless we do this, hatred and revenge will reign triumphant in every heart, and sin hold unbounded sway. But on the other hand, if we forgive those who trespass against us, we shall, by so doing, obey the injunction of Christ, and contribute to the enjoyment of those who offend us, and advance our own happiness. We should see less of the spirit of retaliation which now reigns in our midst, and like the destroying pestilence, spreading desolation wherever it goes. If the poisonous darts of slander are hurled to crush our hopes, and darken our prospects, we should remember that "to err is human," and freely forgive the offender. It will only increase the amount of guilt, by cherishing ill-will towards our fellow men, however great the offence may be. But O, 'tis blessed to forgive! To "do unto others as we would they should unto us;" thus filling the hearts of the sons of men with joy and not with grief. Let us then, if we would render ourselves ornaments to society, and beloved by the worthy and virtuous, cherish the Christ-like spirit of forgivenness, and we cannot fail to be happy. —*Weekly Messenger.*

If you have an enemy, act kindly to him, and make him your friend. You may not win him over at once, but try again. Let one kindness be followed by another, till you have compassed your ends.

A bell weighing 2000 pounds has been manufactured for St. Paul's Church, at Rochester.

© 1846 SCIENTIFIC AMERICAN, INC.

General Agents.

Colon & Adriance, 28, 29, 30, 31 Arcade, Philadelphia.
Hoshkiss & Co., 13 Court street, Boston.
R. K. Porter, New York City.

Local Agents.

Maine.—Shipley W. Ricker, South Berwick; C. D. Bearce, Portland.
New Hampshire.—J. A. Fay, Keene; Wm. O. Ruggles, Hanover; C. M. Smith, Manchester; J. Buffam, Nashua; D. L. Norris, Dover.
Vermont.—Thomas Boynton, Windsor.
Massachusetts.—J. W. Davis, Lowell; S. Thompson, Worcester; H. P. Barnes, Pittsfield; Benj. Perry, Salem; W. P. Seaver, Taunton; P.W. Tenny, Newburyport; Otis Cary, Foxboro; W. Robinson & Co., New Bedford; John Penden, Amesbury; W. S. Barker, Medford.
Rhode Island.—Daniel Cobb, Providence; H. J. Pitman, Bristol.
Connecticut.—Peter Cook, Hartford; E. Downes, New Haven; William Woodward, Middletown; S. Jones, Colchester; J. Hunter, Thompsonville; H. S. Snow, Meriden; Safford & Parks, Norwich; O. P. Butler, Northfield.
New York.—T. Dickinson, Newark; T. S. Hawks, Buffalo; G. W. Hildreth, Lockport; William M. Beauchamp, Skaneatles; M. Nevin, 158 Fulton street, Brooklyn; M. S. Leonard, Oswego.
New Jersey.—J.L. Agens, No. 1 Commerce street, Newark; J. M. Francis, Hoboken; Alfred Walling, Keyport; Lees Garside, Corner of Main and Market sts, Paterson.
Maryland.—S. Sands, 122 Baltimore st., Baltimore.
District of Columbia.—W. H. Ward, Washington.
Georgia.—Chas. O'Neal, Darien.
Florida.—Major J. Nathans, Quincy.
Illinois.—G. W. Arnold, Peru.
Ohio.—Col. A. P. Chesley, Huron.
Wisconsin Territory.—Norris Hubbard, Southport.

Travelling Agents.

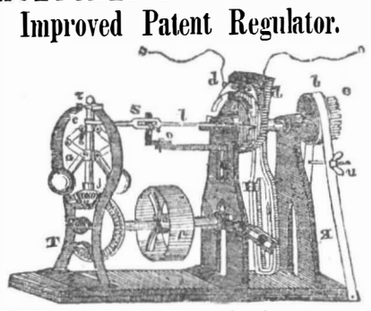
Clark Selleck. J. A. Lattin. Stephen J. Payne.

LIST OF LETTERS

Received since February 5, 1846.

S Sawyer $1.00; S Newton & Co., 2.00; L Garside, 3.00; P B West, 1.00; N Scholfield, 4.00; W T Jacqueth, 4.00; J Wood, 3.00; S Thayer, 2.00; H P Byram, 2.00; J S West, 2.00; F A Gleason, 1.00; H Keith, 1.00; D Cobb, 10.00; J Magoffin, 2.00; W Miller, 2.00; J Williams, 2.00; E J Mims, 2.00; S J Payne, 7.00; Mr. Robinson & Co., 5.00; Safford & Parks, 5.00; W Whitman, 1.00; S Holmes, 2.00; G M'Leran, 1.00; O D May, 3.00; J. M'Cann, 3.00; D L Norris, 2.00; R G Stuart, 2.00; Hotchkiss & Co., 10.95; P. M., Curtisville, Mass, 1.00; H T Small, 3.00; Hon. J Semple, 2.00; T J Dearnes, 2.00; N Hubbard, 4.00; Wm F Lewis, 1.00; P. M., Higgin's Ferry, SC, 6.00; W O Peet, 1.00; C Noyes, 1.00; S Sands, 5.00; S Thomson, 10.00; F Turner, 2.00; R Badger, 1.00; Zieber & Levan, 1.00; Colon & Adriance, 6.37; P. M., Cambridge, Ohio, 1.50; T H Pease, 2.00; JA Lattin 10.00; JH Patch, J W Sawyer, P. M., Lockport; E G Johnson, P. M., Owego; H B Fanna, P. M., Shelburne, Vt; W Bicknell, E G Chandlee (2), J Benedict, O Cary, C W Potter, P. M., Canajoharie; W A Ruggles, H B Nina, H Allen, P. M., New Berlin; A B Smith, A B Hogs, L B Ensign, S S Pike, H Burnham, P.M., Caledonia, G Clark, D Browning, P. M., Allegheney City; L Chabo, T P Hurst, E Downes, P. M., East Douglass; E A Stever, E Rice, P. M., St Clairsville; F W Shumden, E M Vace, P. M. Xenia; J French, P. M., Farmville; J M Gill, R Davis, P. M., Portsmouth; J V Campbell, P. M., Noblesville; J Viedler, P. M., Richmond; O B Beebe, P. M., Vincennes; J Smith, P. M., Abingdon; G T Hopkins, F Sill, P. M., Maumee City; W Hurd, C Westbrook, P. M., Cambridge; R H Speake, D Taylor, J O Brien, P. M., Charlestown, Hon. J. Semple, M W Smith, A Aldridge, N O Brooks, P. M., Moorefield, Z S Robinson, P. M., Old Point Comfort; W T Albree, P.M., Berkley Springs; J Emery, J Bowker, C H Van Wie, L Jones, J N Hastings, C D Wright, N L Cole, J E Blake, J Pender, M S Leonard; P. M., Meadville; D Hanshn, A Beach, P. M., Ripley; P. M., Terre Haute; R H Woodruff, T S M'Lellan, P. M., Ypsilanti; P. M., Windsor; J Cabott, O Simpson, J Tmeny, C J Wood, P. M., Belleville; R B Smithey, G W Canfield, J M Berry, J F Peggs, W Browney, N B Madera, J H Harrison, P. M., Gardiner; J H Basford, P. M., Clinton, T W Gray, P. M., Middlebury; P.M., Adrian; S Everts, J M Palmer, A C Billings, P Stevens, J Philbrook, J M Galloup, H O Burritt, F H Leyon, R F Simonton, J A Lewis, P.M., Franklin; J H K; B B Lewis, J Tucker, A Thayer, L Pattillo, C Benns, G F North, D S Golly, M Sullivan, J Talbot, C W Mores, J M Freeman, A Falkinson, A Stollenwerck, P.M., Louisville.

SCHOLFIELD'S CELEBRATED
Improved Patent Regulator.



N. SCHOLFIELD, Norwich, Conn., continues to manufacture, and keeps constantly on hand, his Improved Patent Regulators, for water-wheels and steam engines; he makes five different sizes, indicated by numbers comencing at the largest size, which is called No. 1, &c..

They are built in a neat and compact form, and printed directions accompany each machine, which will enable any mechanic to put them in operation; as a general rule the different numbers are adapted to different sized wheels, as follows;

For over-shot or breast wheels, 3 feet buckets, No. 5; 5 or 6 feet buckets, No. 4; 6 to 10 feet buckets, No. 3; 8 to 15 feet buckets, No. 2; 12 to 20 ft. buckets, No. 1; greater than 20 feet, No. 1 extra.

The following agencies have been established for the sale of these machines:—Jones, Denney & Ward, Boston; V. J. Bates & Co., Providence, R. I.; Charles Schenck, New York city; D. Wight & Son, Troy, N. Y.; R.M. Vansickler, Albany, N.Y.; S.C. Bemis, Springfield, Mass.; Denslow & Beach, Hartford, Conn.; Joseph B. Hughes, Philadelphia; Wells Chase, and Towner Dunlap & Co.; Baltimore.

N. Scholfield also builds to order Bacon's Improved Pickers, a superior article for cotton or wool.

Norwich Conn., Feb. 14. f15eowtf.

Plumbe National Daguerrian Gallery,
AND PHOTOGRAPHIC DEPOT,
251 *Broadway, corner of Murray street, New York,*
(over Tenney's Jewelry store,)

Awarded the Medal, four first premiums and two "highest honors," at the exhibition at Boston, New York, and Philadelphia, respectively, the best pictures and apparatus ever exhibited.

Price of these superb photographs reduced to that of ordinary ones at other places, so that no one need now sit for an ordinary likeness on the score of economy,—taken in any weather.

Plumbe's premium and German Cameras, Instructions, plates, cases, &c. &c., forwarded to any desired point at lower rates than by ony other manufacturer.

Wanted—two or three skilful operators. Apply as above. jny29

THE PASTORAL LIFE
AND
Manufactures of the Ancients;
comprising
THE HISTORY OF SILK, COTTON, LINEN, WOOL, AND OTHER FIBROUS SUBSTANCES, INCLUDING

Observations on Spinning, Dying, and Weaveing; with appendices on Pliny's Natural History, on the Origin and Manufacture of Linen and Cotton Paper, on Felting, Netting, &c., deduced from copious and authentic sources.

ILLUSTRATED BY TEN ENGRAVINGS ON STEEL.

1 vol. 8vo., pp. 464. New York: Harper & Brothers.
Price $3,00

It is pleasant to turn away from the history of wars, which spread desolation over the earth, to hat of the arts of peace, which give to men wealth and happiness, and convert the rugged earth into a paradise. The first division of this work is devoted to the consideration of Silk, its history and cultivation among the ancients, and the Chinese in particular; the second part treats of the Origin and Ancient History of the Sheep, which involves much of the pastoral life of the ancients, and furnishes many illustrations of the Scriptures; the third treats of the Ancient History of the Cotton manufacture, its great antiquity in India, and the unrivalled skill of the Indian weaver, &c.; the fourth treats of the Linen manufacture, Flax, Hemp, Asbestos, &c. It is a ruly valuable work, and shows great research.—*Boston Trumpet.*

A most remarkable and excellent work, calculated to incite inquiry by others, and highly interesting to manufacturers, as going to show in the most captivating form, the primitive history of their now much advanced manipulations—who is there that is practically acquainted with the various manufacturing operations, as they exist, that does not desire to know their origin, to learn from what simple beginnings the present complex arrangements have been devised to compress so much for the comfort and convenience of mankind. Not only is a lesson taught in this volume, but new appliances may again originate in minds whose power is devoted mainly to the contemplation of such matters in their daily avocations, and it is for this reason, we would recommend this useful work to the perusal of our Manufacturers and Artizans.

We are much mistaken if the reader does not rise from its pages with thankfulness for this short paragraph if it should have any influence in leading him to own the book. The author asks nothing from the public, it is anonymous, published by the Harpers in their best style, handsomly bound and illustrated with engravings, and altogether an American production, worthy of the highest praise to all who have been engaged in presenting it to the public.—*Passaic Guardian.*

ILLUSTRATED BOTANY.

Edited by JOHN B. NEWMAN, M. D.—Circumstances make the man, and very often, as in the present case, the book. For years there has been a steadily increasing interest felt for the vegetable kingdom. Latterly, this taste has been partially gratified by the literary magazines, which owe their popularity, in a great measure to the beautiful flower prints that adorn them. One specimen a month, however, is *not enough*, nor is it required in such connection. A work relating exclusively to the subject, is wanted by the public, and this want, the present enterprise is intended to supply.

We will mention in the outset that no universal panacea will be found in its pages. We have never heard a secret worth knowing from, nor been cured of a deadly disease, by an Indian, or a seventh son of a seventh son, or any of the genus; the medical pretension of all which we utterly loathe and despise.

Preceded by a short introduction on Physiology, and a view of the Natural and Linnæan Systems, the work will be devoted to a separate consideration of each plant.—Together with our own information [illegible] the standard works on Chemistry, Botany, and Medicine, combining every useful item of knowledge, and without lessening its value, present it in a concise and pleasing form. Obtaining our supplies from the same sources as the bee, we hope to *secrete* as elegant a sweet for the mind, as it does for the body. The properties of each, more especially the medicinal, will be confirmed, in a great number of instances, by personal experience. To this will be added its history; its meaning in the language of flowers; and poetry, either original or selected from the gems of the children of song.

The whole illustrated by splendid colored engravings, taken from nature. full size, and finished in the highest style of modern art.

This work is designed to be eminently popular in its application, and there is enough of that which is stronger than fiction about it, to render it, in no ordinary degree, interesting and instructive.

Terms.—This work will be published monthly, with four or six flowers, handsomely painted, in each number. Price three dollars a year, or two copies sent to one address for five dollars. A *very* liberal discount allowed to agents.

J. K. WELLMAN,
feb24-3t. Publisher and proprietor, 118 Nassau st.

W. H. BRIDGENS.
Engraver, Die Sinker,
AND STEEL LETTER CUTTER.
No. 184 William, corner of Spruce st.

Name-Stamps for Blacksmiths, Stone Cutters, Carpenters and machinists, steel letters and figures of all sizes constantly on hand for marking iron, steel, brass and wood; Notary seals, desk seals, door plates made and engraved; artificial flower stamps, vainers and loofers made at the shortest notice and on most reasonable terms. feb11.

F. J. Austin,
PRESS MAKER AND MACHINIST,
(Removed from 93 Gold st., to)
No. 31 Ann street, New York,

Where he continues to carry on the above business in all its various branches, and is prepared to receive orders for all the various kinds of presses, and other articles in his line, used in a Printing Office and Bindery, namely,

Improved patent-machine Printing Press; ditto Washington ditto; improved patent Self-inking Machine; improved Screw Standing-press; Lithographic press; Copperplate press; Card press; Copying and Seal press; Embossing press; improved Patent Book-binders' Cutting press; Cast and Wrought Iron Chases, Stereotype Blocks, etc. etc.

Jobbing of all kinds, done at the shortest notice.

From long practical experience in the business, and personal attention thereto, he is confident of being able to give general satisfaction to all who may favor him with their custom, and to execute all orders with promptness.

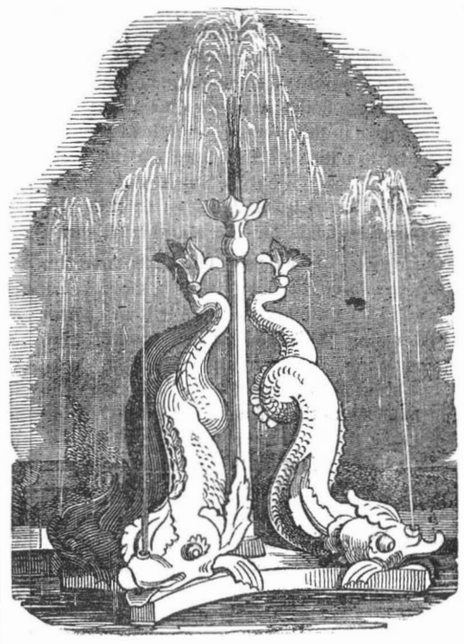
Charges moderate. A reasonable discount made for cash. feb. 11.

A. G. Bagley's Celebrated Improved
EVER POINTED GOLD PEN.

THIS Pen received the highest premium at the last Fair of the American Institute, and has been pronounced by the first teachers of Penmanship in the country to be infinitely superior to any Gold Pen ever before introduced to the American public. The lasting properties of this Pen are undoubted, owing to the total absence of corrosibility from any of the inks in use, and the peculiar shade of the nibs, (which was first introduced by Bagley, (makes it more pleasant to use, renders it less liable to damage, more easy to repair, and prevents the necessity of the great care that other articles of the kind require.

MANUFACTORY, 189 Broadway, N. Y. nov9.

Farnam's Patent Hydraulics.



D. L. FARNAM,
(29 FULTON STREET, N. Y.)

MANUFACTURES Cast Iron Fountains in great variety, at prices from Five to Five Thousand Dollars;—also Lift and Force Pumps, calculated to raise from ten to six thousand gallons per minute, and fitted for every variety of purpose for which they can be required. Fire Engines, of superior powers; Leather Hose, Wind Mills, Water Wheels, Horse Powers, Lead Pipe, Air Pumps, Brass Work, &c. &c.

D. L. F. has pulished a work on the subject of Hydraulic apparatus, Fountains, &c., which contains much useful and practical information, and among others 18 cuts of Fountains, with their prices;—the book can be forwarded by mail to those requiring information on the above subjects. nov9

Patent Agency

DRAWINGS and specifications of machines, with other papers requisite for procuring Patents of New Inventions, will be furnished at short notice, at the office of the Scientific American. No charge will be made for advice or instructions on the subject of securing Patents.

Book for Mechanics.
THE ENGINEER'S AND MECHANIC'S COMPANION.

Comprising Weights, Measures, Mensuration of superfices and solids, tables of squares and cubes,—square and cube roots, circumference, and areas of circles, the mechanical powers, centres of gravity, gravitation of bodies; strength, weight, and crush of materials; waterwheels; hydrostatics, hydraulics, statics, centres of percussion and giration; friction, heat, tables of weight and metals; pipes, scantling, and interest; steam and the steam engine.

By J. M. SCRIBNER, A. M.

Recently published, and for sale by
HUNTINGTON & SAVAGE,
216 Pearl st., price $1,12 to $1,50.
For sale, also, at this office. jny1

PROSCH'S
Daguerreotype Rooms,
EXPRESS BUILDING, 112 BROADWAY,
Nearly opposite the City Hotel, New York.

Likenesses obtained at this establishment in superior style, and inclosed in a handsome Case for One Dollar Fifty Cents additional if colored and sealed.

Every [illegible] sale.

N.B. Instruction given in the art, and the most improved apparatus, &c., furnished on as favorable terms as elsewhere. GEO. W. PROSCH. feb1

FREE EXHIBITION,
Persons are invited to call and see their own
PORTRAITS,
IN DAGUERREOTYPE,
to purchase or not, at their pleasure, at
A. SEALEY'S
Daguerrean Room, Southeast corner of Broadway and Fulton street,
(Entrance 156 Fulton,) New York.

Plain Portraits, including morocco case, $1 00; colored do. $1 50. feb4

The Nautilus.
The most complete, improved and perfect
LIFE PRESERVER

that has ever yet been used or known, is manufactured and for sale at No. 90 Nassau street. This instrument is so constructed as to be condensed into a small compass, and may ever be carried in the pocket; but when required for use, it instantly inflates itself, and may be adjusted round the body and secured in one fourth of a minute, and will effectually secure the wearer against the possibility of drowning. The price of the article is $3,50. jan 22.

Rolling Mills, blast Furnaces & Forges,

Iron works of all descriptious, erected upon the most improved plans; steam or water powers.

Drawings, plans and estimates made for buildings, furnaces and machinery, and contracts for the whole or any part thereof taken and executed with promptness and despatch; and will also give his personal superintendence in the erection of iron works of all kinds, such as Rolling mills, blast furnaces—of hot and cold blasts—anthricite, bituminous, and charcoal or wood furnaaes, forges, trip-hammers; iron, brass, and bell foundry, puddling and heating furnaaes, air cupolo chaffery and refinery, or let out furnaces.

N.B.—All letters directed, post-paid, to S. B. MERKEL, Founder-machinist, millwright, draughtsman and Engineer, Philadelphia. Pa. feb11.

JOHN BROWN.
CARPENTER AND PRINTER'S JOINER.
Nos. 29 & 61 *Ann-street, N. Y.*

MANUFACTURER of Cases, Stands, Furniture, &c. Stereotype Blocks, of various sizes.

Box-wood and mahogany, for Engravers, always on hand.

Stereotype plates blocked at short notice.

Press, paper, and letter boards, of every description.

Book-binders' cutting and pattern boards.

Stereotype boxes, made to order.

Printers', stereotypers, type-founders's, and book-binders' jobbing work done at the shortest notice.

N. B. Orders from various sections of the country solicited, and promptly executed. nov9

GALVANIC APPARATUS.

DANIEL DAVIS, Jr., 428 Washington street, Boston, manufactures all the variety of philosophical apparatus, connected with Magnetism, Galvanism, Electro-magnetism, and Magneto Electricity. He has constantly on hand a variety of Electro-magnetic machines, permanent magnets, Galvanic Batteries, &c. For sale on the most liberal terms. nov18

GURNEY'S PREMIUM DAGUERRIAN Gallery, 180 Broadway, New York.—Pictures taken at the establishment are not excelled in this country—so say his numerous patrons. The public are respectfully invited to call and judge for themselves.

PLEASE TO READ THIS!!
Two Valuable Publications
FOR ONLY
TWO DOLLARS!!

A Three-Dollar Magazine at Half Price.
☞ AGENTS WANTED.
THE CHEAPEST AND BEST FAMILY MAGAZINE IN THE UNITED STATES.
Forty-Eight large octavo Pages, and
FIFTEEN ENGRAVINGS
in each Number. Published on the first of every month.
NEW VOLUME—JANUARY 1846.

ROBERT SEARS, 128 Nassau st., New York, will hereafter furnish his

NEW PICTORIAL AND ILLUSTRATED Family Magazine for 1846.

in all respects equal to the Three-Dollar Magazines, at the low price of ☞ ONLY ONE DOLLAR AND A HALF PER ANNUM.

☞ Any person sending FIVE DOLLARS, shall receive FIVE COPIES of the Magazine, for one year, as he shall direct.

☞ All subjects which will admit of it, will be illustrated with Engravings. The whole number of the Engravings at the conclusion of the volume, will amount to several hundred.

GREAT INDUCEMENTS TO SUBSCRIBE.

We offer to Postmasters and others, a copy of our new Work, just published, entitled the

PICTORIAL HISTORY OF THE AMERICAN REVOLUTION.

(Embellished with an original Portrait of WASHINGTON, by Chapman, and more than 160 other Engravings, 430 pp. 8vo.), for every NEW SUBSCRIBER, with TWO DOLLARS enclosed, free of postage.

☞ Any person procuring TEN SUBSCRIBERS, and sending ELEVEN DOLLARS, shall receive TEN COPIES of the Magazine, and the "History" as above.

☞ We have authority, under the new post office law, to send the above work complete, by mail, bound in one volume. The postage will not exceed twenty-five cents to any part of the United States.

TO YOUNG MEN OUT OF EMPLOYMENT!!
SEARS' NEW PICTORIAL PUBLICATIONS.

AGENTS WANTED! in every town and village throughout the United States, for Sears' Popular Illustrated Works, handsomely bound in gilt pictorial muslin. They consist of:—

SEARS' PICTORIAL SUNDAY BOOK, 600 pages, large 8vo.
SEARS' NEW PICTORIAL FAMILY LIBRARY, 600 pp., large 8vo.
SEARS' PICTORIAL HISTORY OF THE AMERICAN REVOLUTION, 450 pp. large 8vo.
SEARS' PICTORIAL BIBLE HISTORY, 680 pages, large 8vo.
SEARS' PICTORIAL BIBLE BIOGRAPHY, 500 pp., large 8vo.
SEARS' PICTORIAL WONDERS OF THE WORLD, 600 pp., large 8vo.

☞ *Enterprising* and *responsible men* throughout the United States, would do well to engage in the sale of the above new and valuable volumes. A handsome remuneration allowed to all who engage in their sale.

For particulars, address, *post-paid*,
ROBERT SEARS, 128 Nassau st., N. Y.

TEETH.

THE cheapest office in this city for Dental operations is Dr. Brown's, 280 1-2 Broadway, between Reade and Chambers st.

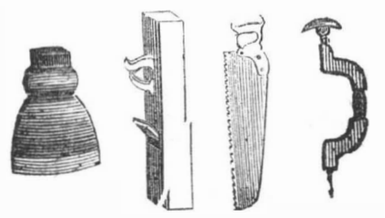
Natural and mineral teeth inserted from	$1 to 3 50
Decayed teeth filled with white cement, and warranted useful for mastication,	50
Toothache cured effectually without pain,	50
Teeth extracted with less than half the usual pain	50

280 1-2 Broadway, 3 doors above Chambers, next to Stewart' & Co.'s new store. Dr. BROWN.

References can be had from several hundred families, also to the medical faculty of the city. nov18

The Best Ink Known,
Two Silver Medals Premium!

At the Annual Fair of the American and Mechanics' Institute for 1846, a SILVER MEDAL was awarded by each to Thaddeus Davids for "the Best writing Ink known." 500 gross 2, 4 6, 8, 16, and 32 oz. steel pen ink; 100 gross, ditto blue, red, japan, and copying ditto; 200 gross, Indelible Ink, warranted, with and without a preparation in elegant cases; 5000 lbs. wafers, all sizes and qualities from 10 to 50 lbs.; 10,000 lbs., sealing wax from 6cts. to $1, per lbs. For sale, wholesale and retail, on accommodating terms, by THADDEUS DAVIDS, Importer and manufacturer of sealing wax, wafers, inks, indelible inks, &c., No. 112 John street, New York, and by all stationers, booksellers, druggists, &c., in the United States. jny29



AT HENRY ROWNTREE'S old established *Tool Store*, at the Corner of Chambers and Chatham streets, Mechanics, Farmers, &c., will find an assortment of good Tools, suitable for almost every branch of trade.

H. R. feels obliged to his many customers, of every class, for their past patronage and hereby assures them that no pains shall be spared to procure the best articles in all variety.

H. R. has a greater part of his goods made expressly for him, and Mechanics, &c., may place confidence in them, having had the gold medal awarded him, at the late Fair, for the best tools.

First rate Razors; Pen and Pocket Knives; Table Knives and Forks, &c.

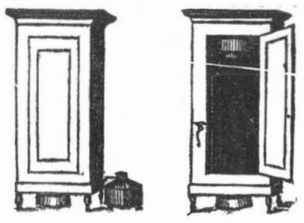
☞ Remember, at the corner of Chambers and Chatham streets. dec26

Levi Chapman.
No. 102 William Street, New York.
Manufacturer of the
CELEBRATED MAGIC RAZOR STROP
of four sides.
Also, Pocket Books, Wallets, &c.
On the most extensive scale.

L. C.'s facilities for manufacturing Pocket Books, or Wallets, for the supply of those wholesale dealers who buy to sell again by the gross or dozen, are unequalled, he having employed for the last ten years from 50 to 270 workmen. His present well regulated system of *division of labor*, enables him to supply these articles at a very great reduction, at least one third less than former prices.

Strops retailed at from 50 cents to $1,00 each, varying only in outward finish and size—warranted to please or the money returned. jan22.

JOHN. H. MILLER
Book, Job, and Music Printer.
No. 41 *Wall Street, in the rear,*
New York. nov18



Locke's Portable Shower Bath.

THE subscriber has the satisfaction to announce to the public, that he has perfected, and is prepared to furnish at short notice, a portable shower-bath, far superior in utility and convenience of management, to anything of the kind hitherto offered. It constitutes a light and genteel article of furniture for a bed-chamber, and so perfectly constructed, that either a lady or gentleman can at any moment enjoy a copious shower without the aid of servants, and withodt having a drop of the water sprinkled on the carpet or floor. And by a slight change in a part of the apparatus, the same may be converted to a steam-bath, either plain or aromatic. These baths are manufactured and may be examined at No. 31 Ann st.

Dec 4. JOHN LOCKE.

ADAMS & Co.'S
GREAT EASTERN, SOUTHERN, AND WESTERN
Daily package Express.

ADAMS & CO. respectfully give notice that their arrangements for their various Expresses have been perfected with the greatest care, and enable them to forward, with the utmost security and rapidity, and at moderate rates, Merchandize of every description, viz.:—Boxes, Bundles, Packages, Specie, Bank Notes, samples valuable papers, &c. &c., to

Boston,	Hartford,
Worcester,	Springfield,
Norwich,	Philadelphia,
New London,	Baltimore,
New Haven,	Washington, D.C.
Fredericksburg, Va.	Wilmington, N. C.
Richmond,	Charleston,
Norfolk	Savannah,
Portsmouth,	Augusta, Ga.
Petersburg,	Cumberland,
Wheeling,	Pittsburg,
Cincinnati,	Louisville,
St. Louis.	

Our Agents in these several Cities pay particular attention to the collection and payment of Notes, Drafts, Bills, &c., and all other business appertaining to our Express.

In connexion with Messrs. Wilmer & Smith, of Liverpool, we have established an European Express, similar in its design and operation to our American Express, and alike beneficial to the Merchants and Importers of both countries. Custom House business promptly attended to.

Express for the South and West leaves the Office daily, at 1-4 to 3, and half past 4 P.M.

Express for the East at 1-4 to 5 P. M.

Merchants and others will bear in mind, we run the only Express Cars between New York and Baltimore.

feb4 nv9o5w ADAMS & CO., 16 Wall street,

JOHNSON'S
DINING SALOON,
No. 144 FULTON STREET.
(Near Broadway): New York.
BILL OF FARE.

Roast Turkey,	18d	Boiled Ham,	6d
" Goose,	18d	Pork and Beans,	6d
" Chicken,	18d	Veal Pie,	6d
" Duck,	18d	Beef Steak Pie,	6d
" Beef,	6d	Chicken Pie,	12d
" Pork,	6d	Mush and Milk,	6d
" Veal,	6d	Rice and Milk,	6d
" Lamb,	6d	Lamb Pot Pie,	6d
" Pig,	12d	Fried Fish,	6d
Boiled Chicken,	12d	Fried Clams,	6d
" Mutton,	6d	Ham and Eggs,	12d
" Corned Beef,	6d	Chicken Soup,	6d
" Pork,	6d	Beef Soup,	6d
" Fish,	6d	Coffee,	6d

Dessert.

Suet Pudding	6d	Mince Pie,	6d
Indian Pudding,	6d	Apple Pie,	6d
Rice Pudding,	6d	Peach Pie,	6d
Plum Pudding,	6d	Plum Pie,	6d
Bread Pudding,	6d	Pumpkin Pie,	6d
Apple Dumplings,	6d	Custard Pie,	6d

Breakfast and Tea.

Beef Steak,	6d	Hot Corn Bread,	6d
Veal Pie,	6d	Indian Cakes,	6d
Mutton Chops,	6d	Boiled Eggs,	6d
Ham and Eggs,	12d	Fried Eggs,	6d
Fried Tripe,	6d	Toast,	6d
Fried Sausages,	6d	Hot Muffins,	6d
Fried Fish,	6d	Hot Rolls,	6d
Fried Clams,	6d	Tea,	3d
Fried Liver,	6d	Coffee,	3d

J. CHAPMAN'S
Gentlemen's Furnishing Store,
No. 354 *Pearl Street,*
One door from Franklin Square, New York.

Stocks, Cravats, ready made linen, hosiery, gloves; and a variety of other articles, of the best quality, constantly on hand, and for sale at the lowest prices. jny 29

W. N. SEYMOUR & Co.
IMPORTERS AND DEALERS,
AT THE
Old Established Hardware and Tool Store,
No. 4 *Chatham Square,*
(at the Foot of the Bowery, N.Y.)

HAVE the greatest assortment of Hardware for builders; Mechanics' tools of all descriptions.
Wm. Graves & Sons' warranted cast steel files & tools.
Worrall's warranted cast steel saws.
Hoe & Co.'s do. do. do.
Cabinet Trimmings. Tin and wooden ware.
House-keeping articles of great variety.
Agricultural tools. Patent Safety Fuse for blasting.
Sole Agents, for this city, for J. A. Fay's patent Mortising Machine.

THE INVISIBLE DOOR SPRING.

W. N. S. & Co. have taken the exclusive agency, for this city, of Ellis's Invisible Door Spring, which commands a ready preference over all others, and has made arrangements to have them put on and adjusted to the doors of those who may require them; Mr. Shaffer, 75 Warren st, is engaged to superintend this department, and will promptly attend to all orders in this line.
Dec. 25.

Lap-welded Boiler Flues.
PROSSER'S PATENT.

THESE Flues alone, are now used in their marine engine boilers, by the French and English governments, and also by companies and private individuals for marine, locomotive, and stationary boilers where rapid generation of steam, with economy of fuel, weight and stowage is an object of consideration.

They can be obtained only, of the Patentee, at No 6 Liberty street, New York. THOS. PROSSER,
Nov 19tf. Patentee.

ELEGANT DAGUERRIAN
Portraits,
Furnished in neat morocco cases for
ONE DOLLAR,
By H. E. INSLEY, 122 and 124 Broadway.

ALEX. MACDONALD: PRINTER.

© 1846 SCIENTIFIC AMERICAN, INC.